

**Recommendations by Mercy For Animals (MFA) on the Proposed
Amendments to the Health of Animals Regulations, Part XII:
Transportation of Animals**

The following is respectfully submitted in response to the Canadian Food Inspection Agency's proposed amendments to the *Health of Animals Regulations* regarding humane transportation appearing in the *Canada Gazette*, Part I.

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Introduction

Canadian laws governing the transportation of farmed animals are arguably the worst in the Western world. Europe,¹ Australia,² New Zealand,³ and even the United States⁴ have more stringent standards than Canada to protect farmed animals during transport. Transportation exposes animals to a number of unique stressors that severely compromise their well-being.⁵ In 2015, more than 9 million farmed animals arrived at Canadian federally inspected slaughterhouses dead or so sick or injured that they were declared unfit for human consumption.⁶ And according to the regulatory impact analysis accompanying the proposed regulations, roughly 14 million farmed animals experience undue suffering each year during transport, with approximately 1.59 million dead on arrival.

These bleak facts stand in stark contrast to the expectations of the Canadian public regarding the Canadian government's obligation to ensure humane treatment in all phases of animal agriculture. A survey commissioned by MFA documents that 97% of Canadians believe Canada's transport regulations must be updated to ensure farmed animals are transported in a safe and humane manner, and 81% said humane transport was *extremely or very important*.⁷

The Health of Animals Regulations regarding farmed animal transport are long overdue for a major overhaul. As the regulatory impact analysis for the proposed regulations correctly notes, numerous deficiencies exist within the current regulatory scheme, including its failure to meaningfully address animal welfare problems; ensure compliance by transporters; reflect the current science on animal care and handling; and match the standards of other countries, many of which are engaged in trade with Canada.

We applaud the Canadian Food Inspection Agency (CFIA) for seeking to address these issues. We are encouraged by the detailed definitions of compromised and unfit animals; the prohibition on transporting compromised and unfit animals to auction; and the transition from regulating length of confinement to regulating intervals without feed, safe water, and rest. However, the proposed regulations fall far short. They fail to adequately address the most pressing issues, including total transport times; provision of food, water, and rest; enforceable stocking density limitations; protection from the elements; treatment of ill or injured animals; and transporter accountability. The result is that the proposed regulations remain out of step with scientific best practices, other G7 countries, and consumer expectations. They also do nothing to resolve the myriad other inadequacies identified by CFIA within the current framework.

¹ Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97. European Union, Official Journal of the European Union.

² Animal Health Australia (2012). Australian Animal Welfare Standards and Guidelines: Land Transport of Livestock. Canberra, Commonwealth of Australia.

³ (2016). Transport within New Zealand: Code of Welfare. Minister for Primary Industries. New Zealand.

⁴ Transportation of Animals, 49 U.S.C. § 80502

⁵ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." *Meat Sci* **92**(3): 227-243.

⁶ Canadian Food Inspection Agency. Condemnation Report by Species for Federally Inspected Plants. (Agriculture and Agri-Food Canada, 2015).

⁷ Mercy For Animals (2015). National Survey of Canadian's Opinion of Farmed Animal Transportation, NRG Research Group, <http://mercyforanimals.com/canadiantransportrequirements/files/Mercy-for-Animals-2015-Transport-Survey.pdf>

MFA urges CFIA to amend the proposed regulations to include the recommendations below, and we refer your office to additional materials (available in English and French) compiled in support of our comments, which can be found at <http://mercyforanimals.org/canadiantransportrequirements/>.

Recommendations

The balance of this paper provides recommendations and support for our recommendations regarding the proposed regulations in accordance with the following headings:

The Five Freedoms

Feed, Water, and Rest

Weather Protection and Ventilation

Transport of Unfit or Compromised Animals

Animal Handling

Overcrowding and Space Requirements

Segregation

Conveyances and Containers

Knowledge and Skills/Training/Contingency Plans

Records

The Five Freedoms

The regulations must include an introductory section with a commitment to the “Five Freedoms.”⁸ This set of ethical imperatives for the treatment of animals is recognized by the World Organization for Animal Health (OIE) and the World Trade Organization. According to OIE, the Five Freedoms “are not sanitary (health) measures but they also have an important role in international trade because they are the only global, science-based standards agreed by the trading nations of the world. Harmonisation of measures with international standards is a WTO

⁸ Farm Animal Welfare Council (2009). "Five Freedoms." Retrieved February 8, 2017, from <http://webarchive.nationalarchives.gov.uk/20121007104210/http://www.fawc.org.uk/freedoms.htm>.

principle to facilitate safe trade and avoid unnecessary trade barriers; this is equally true of measures for animal welfare and for animal health.”⁹

The Five Freedoms are as follows:

1. *Freedom from hunger and thirst* by ready access to fresh water and a diet to maintain full health and vigor
2. *Freedom from discomfort* by providing an appropriate environment including shelter and a comfortable resting area
3. *Freedom from pain, injury or disease* by prevention or rapid diagnosis and treatment
4. *Freedom to express normal behavior* by providing sufficient space, proper facilities, and company of the animal's own kind
5. *Freedom from fear and distress* by ensuring conditions and treatment which avoid mental suffering

The regulations should make clear that the Five Freedoms are the overarching principles of basic animal welfare with which all producers and transporters must comply.

Feed, Water, and Rest

Proposed section 159.1(1) fails to address the grim reality that animals suffer immensely when forced to endure longer travel durations with inadequate food, water, and rest. As a result, more than 9 million farmed animals arrive at federally inspected slaughterhouses each year dead or so sick or injured they are declared unfit for human consumption. Provincial numbers are unknown. Although the time frames proposed by CFIA improve on the current regulations, they are simply not good enough. If the goal of the proposed regulations is to “improve animal welfare and reduce the risk of suffering during transportation,” as CFIA claims, the maximum allowable transport times must be drastically reduced.

The proposed regulations should require that total transport time not exceed eight hours, at which point animals must be fed, watered, and rested for 24 hours.

If given onboard food and water, poultry may be transported up to 12 hours, and cattle, sheep, and horses may be transported up to 24 hours. Under no circumstances should pigs be transported in excess of eight hours, even if onboard food and water are provided.

Clive Phillips, PhD,¹⁰ is professor of animal welfare in the Centre for Animal Welfare and Ethics at the University of Queensland. He gave the following statement to MFA:

The [CFIA] proposed journey times will expose animals to significant stress, as a result of prolonged standing, the need for balance correction and the resultant fatigue, as well as thermal environments outside of their comfort zone. Other factors associated with such journeys, for example prolonged exposure to vibration and noise, are also likely to stress

⁹ Farm Animal Welfare Council (2009). "Five Freedoms." Retrieved February 12, 2017, from <http://www.oie.int/en/animal-welfare/animal-welfare-at-a-glance/>.

¹⁰ A short biography of Clive Phillips can be found in Appendix B.

animals, but are less well understood. However, animals should be given the benefit of the doubt when considering the extent of stress experienced on long journeys. A maximum journey time of 8 hours is supported in many other major livestock producing countries in the world and, as a universal requirement, is more appropriate for a highly developed country, such as Canada, that wishes to provide good welfare for its livestock.

Cattle: Recent research on journey durations in Canada reveals that over a 52-week period, 86% of all loads were in transit less than eight hours, and only 5% exceeded 30 hours.¹¹ Fourteen hours of food and water deprivation, even without the additional stress of transport, results in vigorous attempts to obtain food and water, and 24 hours of deprivation results in physiological changes.¹² Furthermore, cattle transported for 14 hours suffered from high levels of bruising. When journeys of 24 and 31 hours were compared, it was determined that 24 hours was more appropriate because increasing journey durations resulted in higher levels of dehydration and depletion of muscle glycogen and an increased need to rest.¹³ Gallo et al. (2003) recommends journey length be as short as possible for carcass quality and high welfare.¹⁴ Given the science indicating the impacts of food and water deprivation and the small percentage of loads that would be affected, the regulations should mirror the regulation in the European Union limiting transport to eight hours in the absence of food, water, and rest.

Pigs: Research shows that the elevated heart rates and cortisol seen at the beginning of transport do not return to baseline during transport. While pigs are strongly motivated to eat and drink when transported for eight hours, they are highly susceptible to motion sickness and are therefore unlikely to eat on board a transport vehicle,^{15,16} thus supporting our recommendation to prohibit transport of pigs beyond eight hours.

Sheep: After 12 hours of food deprivation, sheep become highly motivated to eat, and after 24 hours, they lose 7–8% of live weight. When temperatures exceed 20°C, they become dehydrated during a 24-hour journey.¹⁷ Hence, if journeys are to last 24 hours, animals must be provided onboard food and water.

Broiler Chickens: Relatively short periods of feed deprivation (up to 6.5 hours) lead to fatigue and dehydration, as indicated by depletion of both liver and muscle glycogen, and elevated

¹¹ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." *Meat Sci* **92**(3): 227-243.

¹² Broom, D., et al. (2002). "The welfare of animals during transport." Report of the Scientific Committee on Animal Health and Animal Welfare. European Commission, Brussels, Belgium.

¹³ Knowles, T. G., et al. (1999). "Effects on cattle of transportation by road up to 31 hours." *Veterinary Record* **145**: 575-582.

¹⁴ Gallo, C., et al. (2003). "Effects of journey and lairage time on steers transported to slaughter in Chile." *Veterinary Record* **152**(12): 361-364.

¹⁵ Brown, S. N., et al. (1999). "Behavioural and physiological responses of pigs to being transported for up to 24 hours followed by six hours recovery in lairage." *Vet Rec* **145**(15): 421-426.

¹⁶ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." *Meat Sci* **92**(3): 227-243.

¹⁷ Broom, D., et al. (2002). "The welfare of animals during transport." Report of the Scientific Committee on Animal Health and Animal Welfare. European Commission, Brussels, Belgium.

plasma osmolality.^{18,19} Furthermore, research indicates that journey duration interacts with ambient temperature to influence mortality, with higher mortality during long journeys at extreme temperatures. In cold temperatures, some animals die of hypothermia and others of hyperthermia, all on the same truck.^{20,21} Given the extreme temperatures characteristic of Canada, broiler chickens must not be transported longer than eight hours without food, water, and rest.

Claire Weeks, PhD,²² is a senior research fellow in animal welfare in the School of Veterinary Sciences at the University of Bristol. She gave the following statement to MFA:

I really think 24 hours is far too long for broilers—there is evidence of poor welfare (which can also reduce meat quality) beyond a 4 hour journey and a short lairage period (e.g. see Warriss et al 1992). Broilers are very young with a high metabolic rate and in my opinion even 12 hours would be too long for them.

Although the proposed regulations give CFIA discretion to approve journeys longer than the prescribed time frames for unforeseen circumstances or emergencies, the regulations should explicitly mandate that **in no event can transport times exceed 24 hours without a period of 24 hours for food, water, and rest.** Research across species has shown that short rest periods are not sufficient to allow animals to eat and drink, and thus a rest period of 24 hours will ensure that all animals are able to rest, rehydrate, and increase glycogen to a level sufficient to endure another journey.^{23,24} Feed and water deprivation prior to transport should also be prohibited, with the exception of pigs, who are prone to motion sickness and should be fasted four hours prior to transport.^{25,26}

159.1(4) (c) should be amended to read “in the case of rest, when the animal has rested for at least 24 hours.”

The proposed regulations fail to give due consideration to young animals. Because very young animals eat more often and are unable to cope with the stresses of transport as effectively as older animals, **pigs younger than four weeks, lambs younger than one week, and calves**

¹⁸ Savenije, B., et al. (2002). "Effects of feed deprivation and transport on preslaughter blood metabolites, early postmortem muscle metabolites, and meat quality." *Poultry Science* **81**(5): 699-708.

¹⁹ Warriss, P., et al. (1993). "The depletion of glycogen stores and indices of dehydration in transported broilers." *British Veterinary Journal* **149**(4): 391-398.

²⁰ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." *Meat Sci* **92**(3): 227-243.

²¹ Weeks, C. and C. Nicol (2000). "Poultry Handling and Transport 18." *Livestock handling and transport*: 363.

²² A short biography of Claire Weeks can be found in Appendix B.

²³ Knowles, T. G., et al. (1999). "Effects on cattle of transportation by road up to 31 hours." *Veterinary Record* **145**: 575-582.

²⁴ Broom, D. (2008). "The welfare of livestock during road transport." *Long distance transport and the welfare of farm animals*. CABI, Wallingford, UK: 157-181.

²⁵ Faucitano, L. (2012). *New Handling And Transportation Strategies Under Canadian Conditions*. London Swine Conference.

²⁶ European Food Safety Authority (2011). "Scientific Opinion Concerning the Welfare of Animals during Transport." *EFSA Journal* **9**(1): 1966.

younger than 10 days may only be transported up to 100 kilometers, and should not be confined to a transport vehicle for longer than four hours.²⁷

Additionally, to ensure that these requirements are enforced, all transport vehicles **must be equipped with tracking systems (i.e., satellite navigation tracking)**. Transporters should be required to provide satellite tracking information to CFIA, who should make this information public either on its website or under the Freedom of Information Act.

Weather Protection and Ventilation

The proposed regulations on exposure to weather conditions give far too much discretion to an industry that has proven, time and again, that it is incapable of self-regulation. MFA's advocacy work alone has shown that one of Canada's largest poultry slaughterhouses, Maple Lodge Farms, which had already been convicted of animal cruelty for improperly transporting animals in severe weather conditions, acted in defiance of a court order by continuing to allow chickens to arrive at the slaughterhouse dead from exposure to extreme heat and cold.²⁸

Clive Phillips, PhD, told Mercy For Animals:

The proposed regulation concerning environmental stressors, including ambient temperature and humidity, is difficult to apply as some transporters are unlikely to know when animals are suffering during inadequate conditions. There is now sufficient evidence of animals' responses to temperature-humidity indices to prescribe precise conditions that should be monitored at various points in the vehicles and action taken if the welfare of livestock is threatened.

Ensuring the humane treatment of animals falls squarely within the federal government's responsibility. Accordingly, the proposed regulations must clearly set forth the precise parameters within which animals may be transported. Outcome-based measures can be useful in determining whether an animal is experiencing good welfare. However, they are insufficient in guiding producers and transport companies and creating an enforceable regulation. As proposed, enforcement by CFIA will have to wait until animals have suffered, been injured, or died. This will not result in high welfare.²⁹

Thermal environment must not cause suffering. Temperatures must be kept 5–30°C³⁰ throughout transport vehicles, and animals must be protected from precipitation and sun.

²⁷ European Food Safety Authority (2011). "Scientific Opinion Concerning the Welfare of Animals during Transport." *EFSA Journal* 9(1): 1966.

²⁸ http://www.maplelodgefarms.com/wp-content/uploads/2016/04/ImprovingBirdWelfare_May20r.pdf

²⁹ Mellor, D. J. (2016). "Updating Animal Welfare Thinking: Moving beyond the "Five Freedoms" towards "A Life Worth Living"." *Animals (Basel)* 6(3).

³⁰ See Appendix A, Table 1 for more specific poultry recommendations.

Humidity must be taken into account through the use of species-specific temperature-humidity indices.^{31,32}

If maintaining temperatures within the prescribed limits is not possible, transport should be delayed until these conditions can be met.

Vehicles must be fitted with temperature sensors located in areas of the vehicle most likely to experience extreme climatic conditions.^{33,34} **Temperature data must be provided to authorities and made available to the public upon request. Further, a warning system must be installed to alert the operator when temperatures within the vehicle deviate from acceptable limits. Immediate action must be taken when temperatures deviate from these limits.**

If a heating or ventilation system is installed to control temperatures, it must be able to operate for four hours independently of the vehicle's engine. If there is no such system, provisions should be made in case of unexpected delays, with documentation of such contingency plans provided to authorities and made available to the public upon request.

Transport of Unfit or Compromised Animals

While we agree with the inclusion of detailed definitions of compromised and unfit animals, the following changes should be made:

1. Wet birds must be considered unfit for transport during cold weather. Wet birds have impaired thermoregulatory capacity, making them more susceptible to hypothermia or freezing in cold temperatures.³⁵
2. Animals with external prolapses must be considered unfit for transport until the prolapses are treated. Rectal and vaginal prolapses are both external and likely to be damaged during transport.³⁶
3. End-of-lay hens (also known as spent hens, see below), especially those from caged systems, are especially likely to have fractures,³⁷ and should be considered compromised to reduce the duration of their suffering.

³¹ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." *Meat Sci* **92**(3): 227-243.

³² Caffrey, N. (2016). *Transportation of animals for slaughter in Canada: welfare issues and regulatory control*, University of Prince Edward Island.

³³ Goldhawk, C., et al. (2014). "Comparison of eight logger layouts for monitoring animal-level temperature and humidity during commercial feeder cattle transport." *Journal of Animal Science* **92**(9): 4161-4171.

³⁴ Mitchell, M. and P. Kettlewell (1998). "Physiological stress and welfare of broiler chickens in transit: solutions not problems!" *Poultry Science* **77**(12): 1803-1814.

³⁵ Hunter, R., et al. (1999). "Wetting of broilers during cold weather transport: a major source of physiological stress?" *British Poultry Science* **40**(S1): 48-49.

³⁶ Department of Agriculture Food and the Marine. "Guidelines For The Welfare Of Animals During Transport ". Retrieved February 9, 2017, from

https://www.agriculture.gov.ie/media/migration/animalhealthwelfare/transportofliveanimals/Guidelines_WelfareOfAnimalsDuringTransport.pdf.

³⁷ Budgell, K. and F. Silversides (2004). "Bone breakage in three strains of end-of-lay hens." *Canadian Journal of Animal Science* **84**(4): 745-747.

4. Under “compromised,” “(p) is in the last ten percent of its gestation period or has given birth during the preceding 48 hours” should be changed to “is in the last ten percent of its gestation period or has given birth during the preceding seven days.”
5. The following statement in section 136 (3) should be removed: “An animal is considered unfit for the purposes of this Part if it is both compromised and unfit.”

Claire Weeks, PhD, made the following statement with which we agree:

I would suggest adopting the terminology “end of lay hens” as we have found by calling them “spent” people inevitably regard them as worthless and treat them accordingly. It is now pretty much standard practice in government legislation and (Industry) codes of practice or assurance scheme standards in Europe to avoid the use of “spent.”

We agree with the prohibition on transporting unfit animals. However, 12 hours is far too long to withdraw feed, water, and rest from compromised animals. It will result in intense suffering and cause compromised animals to become unfit during transport. These animals are already suffering from conditions such as lameness or frostbite or have “impaired capacity to withstand transportation because of infirmity, illness, injury, fatigue or any other condition intrinsic to the animal.” Because of this and the complicated relationship between stress and immune response,³⁸ **compromised animals must not be without feed, water, and rest for more than eight hours and should be transported the shortest distance possible.**

To be comprehensive, the regulations should require that a **properly trained individual inspect all animals prior to the journey to determine fitness for travel.** If uncertainty exists as to an animal’s fitness for travel, or if an animal exhibits difficulty walking, a veterinarian must be consulted.

Although the proposed regulations provide guidance in the event that an animal becomes unfit or compromised during the journey, no regulatory mechanism is in place for transport operators to monitor and identify animals who become so during transport. This deficiency renders that provision essentially meaningless.

Drivers must inspect animals for injury or signs of pain or distress within two hours of the beginning of the trip and at least every four hours thereafter, attending to any welfare problems as they arise. Compromised animals must be inspected every two hours. If animals become ill or injured during transport, they must be separated from the group to be treated or euthanized according to best welfare standards.³⁹ The time and place of each inspection, as well as any deaths or incidents causing suffering to animals, must be recorded. This information must be provided to CFIA upon request.

Animal Handling

We support the proposed regulations’ prohibition on beating, dragging, prodding, or otherwise

³⁸ Salak-Johnson, J. L., & McGlone, J. J. (2007). “Making sense of apparently conflicting data: Stress and immunity in swine and cattle.” *Journal of Animal Science*, **85**(13_suppl): E81-E88.

³⁹ See Appendix A, Table 4.

mishandling animals during transport. However, in order to make this prohibition meaningful, a **zero tolerance policy for animal abuse must be established**. Acts involving intentional cruelty should be categorized as “very serious” violations, and **stiff penalties for violations** are necessary to make these regulations effective, meaningful, and dissuasive.

The routine use of electric prods must be prohibited. Electric prods must only be used as a diagnostic tool by a veterinarian. Electric prods have been shown to increase stress, carcass bruising, and blood splashes.⁴⁰

Dr. Ian J.H. Duncan, BSc, PhD,⁴¹ emeritus chair in animal welfare at the University of Guelph, upon viewing footage obtained by MFA at Western Hog Exchange,⁴² a pig assembly yard in Red Deer, Alberta, stated:

[T]he third scenes involve a male worker using an electric prod repeatedly on a crippled pig that is unable to walk. The pig is squealing in pain and distress and the worker continues to prod it. One worker warns another that prodding should not be carried out if there is a CFIA Inspector present. This is completely unacceptable and cruel. Electric prods should only be used in emergencies and never used repeatedly.

In response to the same footage, **Dr. Kees Scheepens** shared with MFA:

In the Netherlands, the law states that animals who are unable to stand on their own are not allowed to be moved. They must be euthanized on-farm.

To implement a robust and meaningful set of animal handling regulations, the following recommendations should be included:

- Monitoring for compliance should be frequent and unannounced.
- CFIA should establish a training program for local law enforcement agencies regarding animal welfare during transport to better distribute oversight responsibility.
- Video cameras that live stream to the internet should be installed in catching, loading, and unloading areas.⁴³
- Offences should be prosecuted under the Health of Animals Act and the Meat Inspection Act as they were in R. v. Maple Lodge Farms, 2013 ONCJ 535.
- Companies should encourage careful handling of animals by workers, with incentives for farms and transport companies whose animal shipments have the lowest DOA numbers.

The proposed regulations should also encourage use of new technologies that minimize opportunities for animal injury and distress.

To reduce stress during loading and unloading, when possible, hydraulic lifting systems should

⁴⁰ Correa, J. A., et al. (2010). "Effects of different moving devices at loading on stress response and meat quality in pigs." *J Anim Sci* **88**(12): 4086-4093.

⁴¹ A short biography of Dr. Duncan can be found in Appendix B.

⁴² [http://transport.mercyforanimals.org/..](http://transport.mercyforanimals.org/)

⁴³ Cameras should provide high-resolution footage and operate at a speed allowing for real-time monitoring by the public and a third-party non-governmental organization.

be used in place of ramps.^{44,45} When ramps are used, solid sides will reduce distraction to animals during loading and unloading and result in less balking.^{46,47}

145(1)(b) should be amended to read: "has solid sides of sufficient strength and height to prevent the animal from falling off"

145(2) should be amended to read:

- (a) more than 26° from horizontal in the case of a cervid (deer), goat or sheep;
- (b) more than 26° from horizontal in the case of an adult bovine (cattle) and more than 12° for calves; and
- (c) more than 20° from horizontal in the case of a porcine (pig) or horse

Ramp recommendations are in line with regulations in the EU, Australia, and New Zealand.

Overcrowding and Space Requirements

Overcrowding and lack of adequate space is a documented stressor⁴⁸ for animals during transport. In their recent chapter⁴⁹ on animal transportation, animal welfare experts Donald Broom (former chairman of the OIE land transport group) and Andrew Fraser said the following:

Floor space allowances need to be defined in unambiguous terms. In particular, stocking densities must be defined as square meters of floor area per animal of a specified live weight, e.g. m²/100 kg or kg live weight per m² floor area (kg/m²). Stocking rates such as m² per animal (m²/animal) are not an acceptable way of defining floor space requirements, since these take no account of variation in animal weight. Definitions of acceptable space allowances must consider the whole range of animal sizes (live weights) to be encountered.

Again, CFIA is obligated to set specific, enforceable maximum stocking densities rather than rely on a profit-seeking industry to comply with vague outcome-based measures that can only be assessed after animals suffer. MFA offers the following parameters for stocking densities based on allometric equations,⁵⁰ and incorporates herein the recommended species-specific stocking densities set forth in Appendix A, Table 3.

⁴⁴ Faucitano, L. (2012). New Handling And Transportation Strategies Under Canadian Conditions. London Swine Conference.

⁴⁵ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." Meat Sci **92**(3): 227-243.

⁴⁶ Canadian Agri-Food Research Council (2001). Recommended Code of Practice for the Care and Handling of Farm Animals - Transportation.

⁴⁷ Grandin, T. (1990). "Design of loading facilities and holding pens." Applied Animal Behaviour Science **28**(1-2): 187-201.

⁴⁸ Schwartzkopf-Genswein, K. S., et al. (2012). "Road transport of cattle, swine and poultry in North America and its impact on animal welfare, carcass and meat quality: a review." Meat Sci **92**(3): 227-243.

⁴⁹ Chapter 21 of: Broom, D.M. and Fraser, A.F. 2015. Domestic Animal Behaviour and Welfare, 5th edn. (pp 472). Wallingford: CABI.

⁵⁰ Petherick, J. C. and C. J. C. Phillips (2009). "Space allowances for confined livestock and their determination from allometric principles." Applied Animal Behaviour Science **117**(1-2): 1-12.

Transport stocking densities should allow animals to lie down if they wish, thermoregulate effectively, and assume natural postures and movement.

Animals must be able to stand up after lying down and have sufficient headroom to allow freedom of movement and ensure adequate ventilation.⁵¹ Stocking densities must be uniform across the vehicle (except for cases of solitary animals) and within acceptable limits.⁵² If ambient air temperature inside the truck is between 20 and 30°C, stocking densities must be sufficiently reduced to protect animals from hyperthermia.⁵³

Segregation

The proposed regulations relating to segregation and overcrowding leave open a dangerous loophole that would permit producers to mutilate animals in order to increase stocking density. An explicit prohibition on such actions must be included in the regulations.

To cut the tusks of boars or otherwise mutilate animals in preparation for transport must be prohibited. As clearly seen and heard in the footage from Western Hog Exchange,⁵⁴ de-tusking is a cruel and painful process.

After reviewing the above-noted footage, **Dr. Mary Richardson, DVM,⁵⁵** stated:

We see an example of detusking a boar. This procedure causes severe, acute and prolonged pain because the pulp of the tooth is exposed. These boars should be separated for transport so that detusking is not necessary.

Further support for banning this practice comes from **Dr. Ian J.H. Duncan, BSc, PhD,⁵⁶** emeritus chair in animal welfare at the University of Guelph. Upon viewing the above-noted footage, Dr. Duncan stated:

Finally, scenes are shown of boars being “de-tusked” using large two-handed shears. This is an extremely painful procedure as the tusks are chopped off around the gum level. These are teeth, and chopping them off at this level exposes the pulp and the rich supply of nerves that teeth have. The boars can be heard squealing in extreme pain as the tusks are chopped through. A rear view of one of the boars shows it writhing in agony as the tusks are chopped off. But of course the pain does not end there; the boar will be in extreme pain from the nervous tissue until eventually it is killed. The reason for chopping off tusks is to prevent boars from damaging each other during fights. Boars

⁵¹ See Appendix A, Table 2.

⁵² Where k values have been determined, densities must be based on the allometric equation $A=k \cdot BW^{0.667}$ in which A is area in m² and BW is body weight in kg. See Appendix A, Table 3 for species-specific stocking densities.

⁵³ Chapter 21 of: Broom, D.M. and Fraser, A.F. 2015. Domestic Animal Behaviour and Welfare, 5th edn. (pp 472). Wallingford: CABI.

⁵⁴<http://transport.mercyforanimals.org/>.

⁵⁵ A short biography of Dr. Richardson can be found in Appendix B.

⁵⁶ A short biography of Dr. Duncan can be found in Appendix B.

will fight with other boars during transport. For this reason boars should be transported to slaughter in individual pens.

Similarly, **Dr. Debora Zimmermann, DVM**,⁵⁷ of Veterinary Consulting Inc. observes:

De-tusking is performed at this facility with a set of Fiskars tree limb cutters. Although any person with a heartbeat can interpret the blood-curdling screams of the boars having their teeth snapped off (and possibly split apart) as intensely painful—research done at the University of Guelph now backs this up with scientific evidence that these tusks are innervated with nervous tissue. Intentionally causing excruciating pain for the sake of convenience is unacceptable.

Tusk trimming must also be prohibited, as it is likely to be painful⁵⁸ and has not been demonstrated to reduce skin lesions in mixed boars.^{59,60}

The following groups must be transported separately:

- (1) Adult breeding boars, horned cattle, and stallions
- (2) Animals of different species
- (3) Animals of significantly different sizes or ages
- (4) Animals from different farms
- (5) Aggressive individuals (sexually mature males should be separated from females)
- (6) Horses, except for mares with foals (should be transported each in a separate stall)

Conveyances and Containers

Vehicles must be designed to avoid injury and suffering.

In particular, the section should be amended as follows:

150(1)(h): add “and disinfected to prevent disease transmission”

150(1)(i): amend to read: “prevent the pooling, leakage or escape of water, urine and liquid manure onto other animals. Animals must be given bedding specific to species, age, and weather that ensures adequate absorption of urine and feces. Hygiene must be assessed before loading and upon unloading using a scoring system similar to the cow cleanliness assessment.⁶¹ Bedding must be sufficient to ensure that hygiene does not decline over the course of the journey.”⁶²

⁵⁷ A short biography of Dr. Zimmermann can be found in Appendix B.

⁵⁸ Hook, T. J., et al. (2010). "Rethinking cull boar transport." *The Canadian Veterinary Journal* **51**: 315-322.

⁵⁹ Paetkau, L. N. and T. L. Whiting (2008). "Increased number of skin lesions as a measure of aggression following the mixing of slaughter boars from western Canada assembled for export." *The Canadian Veterinary Journal* **49**(5): 489.

⁶⁰ Grandin, T. (2016). "Transport Fitness of Cull Sows and Boars: A Comparison of Different Guidelines on Fitness for Transport." *Animals (Basel)* **6**(12).

⁶¹ Canadian Bovine Mastitis Research Network. Cow Cleanliness Assessment. (2014).

⁶² Where species-specific scoring systems do not exist, they must be developed.

151(1) (b): add “and has sufficient lighting and access doors to allow inspection and care of animals”

A new section 151(3) should be added: “Vehicles must have shock absorption sufficient to reduce the impact of vibration on animal welfare.”⁶³

Knowledge and Skills / Training / Contingency Plans

Much of the needless cruelty and abuse inflicted on farmed animals is the result of inadequate training and supervision of factory farm, transport, and slaughterhouse workers. While the proposed regulations address these important issues, they do not go far enough.

Annual trainings as outlined below should be provided to all employees who have any direct contact with live animals. **No exceptions should be made**, however knowledgeable or skilled an employee may be.

Drivers must obtain an annual certificate of competence indicating training in and understanding of animal physiology, drinking and feeding needs, animal behaviour and stress, ways to reduce handling stress in animals, driving methods that uphold high welfare of transported animals,⁶⁴ emergency care, euthanasia methods (see Appendix A, Table 4), a contingency plan in case of unexpected delays, and all other factors set forth in proposed sections 138, 139, and 140.

Transport companies must demonstrate sufficient and appropriate staffing and training, and must provide supporting documentation to CFIA upon request.

Records

MFA’s comments in the previous sections identify the categories of records sought from transporters, including (1) reports from installed electronic navigation systems that record the place of departure, place of destination, route, and opening and closing of the loading flap, (2) records of en route monitoring of animals to identify animals who become unfit for travel during transport, (3) information on the number of animals who become unfit or injured and the action taken, (4) contingency plans, and (5) certificates of employee training. Transporters should also be required to document the number of animals who arrive injured, ill, or dead.

All of this information should be compiled by CFIA and made available to the public, preferably on a website but at least via Freedom of Information requests.

⁶³ Nielsen, B. L., et al. (2011). "Road transport of farm animals: effects of journey duration on animal welfare." *Animal* 5(3): 415-427.

⁶⁴ Broom, D. (2014). Welfare of transported animals: factors influencing welfare and welfare assessment. *Livestock handling and transport*. T. Grandin. Wallingford, CABI: 23-38.

Conclusion

CFIA has the authority, the mandate, and the responsibility to ensure that farmed animals are treated humanely so that Canadian agriculture remains competitive. As stated in the regulatory impact statement, the goal of the new regulations is to correct numerous deficiencies in the current scheme in order to improve animal welfare and prevent animal suffering during transport. In order to meet this goal, the proposed regulations, which continue to lag behind current science, other G7 countries, and consumer expectations, should be strengthened as outlined above.

The question is not whether CFIA should take action to address animal suffering during transport; it has already chosen to take action. The question is whether that action will be based on sound policy, whether it will be future looking, and whether it will actually protect animals from cruel treatment.

MFA appreciates the opportunity to comment on the proposed regulations governing animal transport under the Health of Animals Regulations, and we strongly urge CFIA to revise the proposed regulations such that Canada is at least on par with other countries and the expectations of its citizenry are respected.

Please do not hesitate to contact us to discuss these comments or to obtain copies of the scientific literature in support of our recommendations.

Appendix A

Table 1: Exceptions to temperature regulations of 5 – 30°C

Species	Temperature Guidelines (within containers)
Broiler chickens and end-of-lay hens ¹	20 – 24°C
Newly hatched chicks ²	30 – 36°C

Table 2: Headroom Guidelines

Species	Forced Air Ventilation	Minimum Distance from Top of Head to Ceiling of Container
Sheep and Pigs ³	Yes	15 cm
	No	30 cm
Cattle (from tip of horns if present), including calves ³	Either	20 cm
Poultry ⁴	Either	10 cm
Rabbits ⁵	Either	Minimum crate height = 35 cm
Horses ⁶	Either	75 cm from the withers of the tallest horse to the ceiling

Table 3: Recommended Stocking Densities or Allometric Equations to Calculate Stocking Density by Average Weight of Animal (Pregnant birds and mammals must be allotted 10% more space.)

Species	Additional Criteria	Equation or Stocking Density	Comments
Cattle ¹	Standing	$A = 0.019 * W^{2/3}$ $A = 0.027 * W^{2/3}$	
	Lying		
Sheep ¹	Shorn ewes	$A = 0.026 * W^{2/3}$ $A = 0.033 * W^{2/3}$	
	Fleeced ewes and lambs	$A = 0.029 * W^{2/3}$	
	Shorn lambs		
Pigs ¹	Finishing phase	$A = 0.027 * W^{2/3}$	All pigs must be able to lie down and stand up.
		$A = 0.036 * W^{2/3}$	
Goats ⁷	<35 kg	0.25 m ² /animal	
	25 – 55 kg	0.35 m ² /animal	
	> 55 kg	0.58 m ² /animal	
Horses ⁷		1.75 m ² /animal	Individual pens. During journeys longer than eight hours, foals and young horses must be able to lie down.
Poultry by age/size ^{1,8}	Chicks day-old and younger	21 – 25 cm ² /chick	
	<1.6 kg	180 – 200 cm ² /kg	
	>1.6 kg	160 cm ² /kg	
Rabbits ¹	>1kg, filtered crates	0.2 m ² /animal	
	>2.5 kg, unfiltered crates	0.1 m ² /animal	

Table 4: Acceptable Methods of Euthanasia

Species	Acceptable Methods of Emergency Euthanasia During Transport
Adult pigs over 5.5 kg	Gunshot, penetrating captive bolt gun followed by exsanguination or pithing, overdose of injectable anesthetics ^{9, 10}
Piglets up to and including 5.5 kg	Non-penetrating captive bolt followed by exsanguination or pithing, overdose of injectable anesthetics ^{9, 10}
Poultry	Penetrating and non-penetrating captive bolt gun; overdose of injectable anesthetics, including barbiturates and barbituric acid derivatives; manual cervical dislocation in chickens and turkeys less than 35 days old ^{9, 10}
Cattle	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing ^{9, 10}
Calves	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing ^{9, 10}
Goats	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing, injection with barbiturates or barbituric acid ^{9, 10}
Kids	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing, injection with barbiturates or barbituric acid ^{9, 10}
Sheep	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing, injection with barbiturates or barbituric acid ^{9, 10}
Lambs	Firearm, penetrating or non-penetrating captive bolt gun followed by exsanguination or pithing, injection with barbiturates or barbituric acid ^{9, 10}
Horses	Gunshot, overdose of injectable anesthetics ^{10, 11}

Supporting Literature for Appendix A

- 1 European Food Safety Authority, "Scientific Opinion Concerning the Welfare of Animals during Transport" (2011) 9 EFSA Journal 1966.
- 2 The Humane Society of the United States, An HSUS Report: Welfare Issues with Transport of Day-Old Chicks, *HSUS Reports: Farm Industry Impacts on Animals* vol. Paper 7, (2008).
- 3 D. Broom, P. B. Gade, A. Ferlazzo, J. Hartung, X. Manteca and P. Warriss, "The welfare of animals during transport" (2002) Report of the Scientific Committee on Animal Health and Animal Welfare. European Commission, Brussels, Belgium.
- 4 Animals' Angels, Undue Suffering during Animal Transports due to Insufficient Headroom, (Frankfurt am Main, Germany 2010).
- 5 H. J. Blokhuis, D. M. Broom, I. Capua, S. Cinotti, M. Gunn, J. r. Hartung, P. Have, J. M. Vilanova, D. B. Morton, M. Pépin, D. U. Pfeiffer, R. J. Roberts, J. M. S. n. Vizcaino, A. Schudel, J. M. Sharp, G. Theodoropoulos, P. Vannier, M. Verga and M. Wierup, "Opinion of the Scientific Panel on Animal Health and Welfare on a request from the Commission related to the welfare of animals during transport" (2004) 44 European Food Safety Authority 1-36.
- 6 F. a. R. A. Department for Environment, Welfare of Animals During Transport: Advice for transporters of horses, ponies and other domestic equines, *Defra Publications*, (London, UK).
- 7 COUNCIL REGULATION (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97, In European Union (ed.), (2005).
- 8 Ontario Farm Animal Council, Poultry Industry Council and Ontario Ministry of Agriculture Food and Rural Affairs, Should this bird be loaded? A guide for preparing, loading, and transporting poultry, (
- 9 Global Animal Partnership, 5-Step® Animal Welfare Standards, vol. 2016, (Austin, TX).
- 10 American Veterinary Medical Association, AVMA Guidelines for the Euthanasia of Animals: 2013 Edition, (2013).
- 11 B. Wright, G. Rietveld and D. Kenney, Euthanasia of Horses, (2005).
- 1 European Food Safety Authority, "Scientific Opinion Concerning the Welfare of Animals during Transport" (2011) 9 EFSA Journal 1966.
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- 3 D. Broom, P. B. Gade, A. Ferlazzo, J. Hartung, X. Manteca and P. Warriss, "The welfare of animals during transport" (2002) Report of the Scientific Committee on Animal Health and Animal Welfare. European Commission, Brussels, Belgium.
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- 8 Ontario Farm Animal Council, Poultry Industry Council and Ontario Ministry of Agriculture Food and Rural Affairs, Should this bird be loaded? A guide for preparing, loading, and transporting poultry, (
- 9 Global Animal Partnership, 5-Step® Animal Welfare Standards, vol. 2016, (Austin, TX).
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- 1 The Humane Society of the United States, An HSUS Report: Welfare Issues with Transport of Day-Old Chicks, *HSUS Reports: Farm Industry Impacts on Animals* vol. Paper 7, (2008).
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- Verga and M. Wierup, "Opinion of the Scientific Panel on Animal Health and Welfare on a request from the Commission related to the welfare of animals during transport" (2004) 44 European Food Safety Authority 1-36.
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 - 6 European Food Safety Authority, "Scientific Opinion Concerning the Welfare of Animals during Transport" (2011) 9 EFSA Journal 1966.
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 - 10 American Veterinary Medical Association, AVMA Guidelines for the Euthanasia of Animals: 2013 Edition, (2013).
 - 11 B. Wright, G. Rietveld and D. Kenney, Euthanasia of Horses, (2005).

Appendix B

Clive Phillips, PhD, is professor of animal welfare at the Centre for Animal Welfare and Ethics, University of Queensland, Australia. Dr. Phillips studied agriculture at the University of Reading, UK. Later he obtained a doctorate in dairy cow nutrition and behaviour from the University of Glasgow. He lectured on and researched livestock production and welfare at the universities of Cambridge and Wales. In 2003 he joined the University of Queensland as the inaugural chair in animal welfare, establishing the Centre for Animal Welfare and Ethics. Since then, he has largely been involved in animal welfare and ethics research as well as animal welfare policy development. A focus of his research has been long-distance transport of livestock by ship. He edits the journal *Animals* and a book series on animal welfare for Springer. Recent books include *The Animal Trade*, published by CABI in 2015, and *Principles of Cattle Production*, 2nd edition, published by CABI in 2010. He also chairs the Queensland government's Animal Welfare Advisory Board.

Claire Weeks, PhD, is a senior research fellow in animal welfare in the School of Veterinary Sciences at the University of Bristol. Following a bachelor's in animal science at the University of Nottingham, Dr. Weeks studied the behaviour and welfare of calves in various production systems, including those for veal production, for her doctorate at the University of Bristol. Her studies of farmed animal behaviour and welfare have led to new techniques and advances in knowledge that underpin legislation and codes of welfare in several countries. She also serves as a consultant, working with industry and charities, undertaking knowledge exchange, training, market research, and technical review reports. Dr. Weeks is also an award-winning freelance journalist. Animal welfare during marketing and transport has been a major research theme during her career, including pony and sheep transport welfare and several aspects of poultry welfare, such as heat stress in broilers and fitness to travel of end-of-lay hens.

Dr. Mary Richardson, DVM, has been involved in animal welfare issues for more than 20 years. She chaired the Animal Welfare Committee for the Ontario Veterinary Medical Association and produced policy statements on a wide range of topics. Dr. Richardson also served as chair of the Animal Care Review Board for the Solicitor General of Ontario, during which time she presided over court cases involving animal abuse. She was also a board member of the Centre for the Study of Animal Welfare at the University of Guelph.

Dr. Ian J.H. Duncan, BSc, PhD, is professor emeritus of applied ethology in the Department of Animal and Poultry Science at the University of Guelph and also holds the oldest university chair in animal welfare in North America. He has published two books, 35 book chapters, and more than 150 scientific papers.

Dr. Kees Scheepens is a veterinarian and author of several books on raising pigs according to advanced humane methods. Dr. Scheepens works with producer groups around the world, providing practical training seminars on how to better read and understand the signals pigs give about their health and well-being. He farms with his wife and children in the Eindhoven area of The Netherlands.

Debora Zimmermann, DVM, graduated from the Western College of Veterinary Medicine in 1988. In addition to her doctorate, she holds a degree in biology (zoology) from the University of Alberta and a diploma in animal health technology from NAIT.

Dr. Zimmermann owned and operated Terwillegar Veterinary Clinic for 14 years (1994–2008). Global Television named her Woman of Vision for January 2002 after she rebuilt her practice following a devastating fire during which she entered the burning building just in time to rescue the 11 animals under her care at the time. Dr. Zimmermann is a member of the Canadian Veterinary Medical Association, the Alberta Veterinary Medical Association, the International Veterinary Academy of Pain Management, World Animal Protection, In Defense of Animals, Defenders of Wildlife, and Zoocheck Canada.