

**CANADIAN  
MEAT GOAT  
Association**

**CANADIENNE  
de la CHEVRE  
de BOUCHERIE**

**Low-stress transport can improve the health and carcass quality of goats.**

# Lowering Stress in transported goats

**A**ny stress goats experience in transportation can adversely affect their immune system and carcass quality. Everyone who handles goats, from the time they are gathered for transportation until they are settled at their final destination, has a responsibility for the goats' well-being. You will deliver a healthier animal or higher quality product by reducing or eliminating causes of stress related to transportation. Plan to handle goats with care, provide safe transport and ensure appropriate conditions during transportation and unloading.

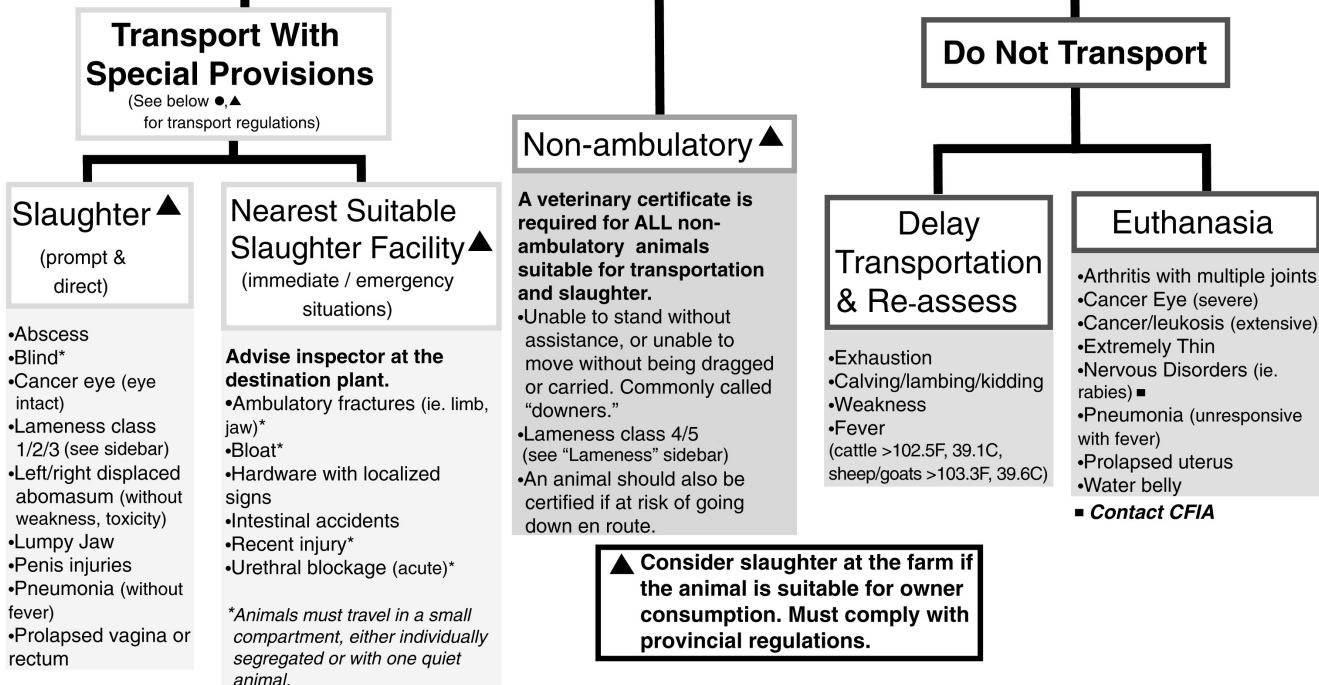
## Handling and Loading

Ensure that all animals are fit to be transported. Sick, weak or extremely thin goats should not be transported.

- Load the goats carefully. When lifting a goat into a vehicle, grasp it around the body, being sure to support the chest and abdomen. Never lift goats by the head, horns, ears, hair or legs.
- Separate larger goats or other species of livestock on vehicles from smaller goats to prevent injury and bruising. In close confinement, the aggressive

## PRODUCER Guidelines for Transporting

### Compromised Cattle, Sheep & Goats



- **Compromised animals – only slaughter if – a.** All drug withdrawal times are met. **b.** The animal is fit for human consumption. **c.** The animal can be humanely loaded and transported. If these conditions are not met, the animal must be humanely euthanized and disposed of according to federal, provincial and municipal regulations.

**PLEASE CONTACT YOUR VETERINARIAN FOR ADVICE OR ASSISTANCE**

behaviour of dominant goats can increase, leading to more attacks and possible injuries. Heavier goats may more than double their attacks when they are placed with lighter goats. Horn hooking and bunting are the most frequently observed behaviours during clashes. Bruising increases when horned goats are placed in crowded conditions.

- Supply adequate bedding over a non-skid floor in the vehicle (or spread sand over the floor before putting in the bedding) to give the goats sure footing. Being deprived of sure footing increases their stress.

### **Travelling**

The way the vehicle is driven greatly affects a goat's stability and balance while being transported. Goats become fearful when their standing position is being disturbed or if they have unstable footing on the floor of a moving vehicle.

- Use a loading dock that allows vehicles to drive away from it with minimal turns, stops and starts. A rough start causes hormones and blood components to fluctuate and may increase heart rates up to twice the normal rate.
- Drive cautiously when transporting goats to reduce the chance that goats will fall. Braking and cornering cause 75% of falls; and crossing bumps and accelerating account for 25% of falls.
  - Accelerate slowly and smoothly.
  - Plan your braking and slow down gradually.
  - Drive slowly when going around corners or crossing bumps.

The noise level in livestock trailers is often high and varies little with speed or type of road travelled. Noise has a greater effect on releasing stress related hormones in goats than motion does.

- Tighten loose metal fittings and flooring in the trailer to reduce rattling noise.
- Wrap rubber (e.g., rubber hose) around portable loading chutes and partitions to

reduce banging noise.

It is important to use a safe vehicle that has no known physical features that could cause injury to an animal.

- Put padding over hinges, latches and other supports to prevent bruising if a goat accidentally falls against projections. Forceful contact with the vehicle causes bruising.
- Prevent engine exhaust from entering the area occupied by the goats.

### **Controlling Transport Environment**

Goats become susceptible to respiratory infections after prolonged trips under adverse weather conditions. Physical stress responses generally begin decreasing within 3 hours after the end of transportation. However, transportation stress could have a long-term affect on the immune system of goats.

### **Overcrowding**

Overcrowding in any weather condition can cause harm to goats. Signs of overcrowding and animal discomfort during transportation include:

- Moving around and not settling in one place for the trip
- Scrambling for footing
- Continuing noise from animals for prolonged periods of time
- Lying down involuntarily and, possibly, being unable to get up

Use the charts on the next page to determine the best stocking density for your vehicle.

### **Cool Weather**

Goats, kids in particular, are susceptible to loss of body heat and frostbite. Avoid cold stress during transportation in cool wet weather, as well as in cold weather. Check for signs of animal discomfort (cold stress) during transportation (e.g., wet goats, eating of available bedding, or fluids frozen to the face or nostrils).

In cool and cold conditions:

### ... 3 ... LOWERING STRESS IN TRANSPORTED GOATS

- Keep goats dry.
- Increase bedding.
- Cover openings in the vehicle to protect goats from cold winds and freezing rain. (Wind chill lowers the environmental temperature.) Having adjustable weather panels on the outside of a vehicle will allow you to make adjustments without unloading the goats.
- Avoid overcrowding. Goats packed in too tightly are predisposed to frostbite because individual animals cannot change position in the vehicle and move away from the wind.

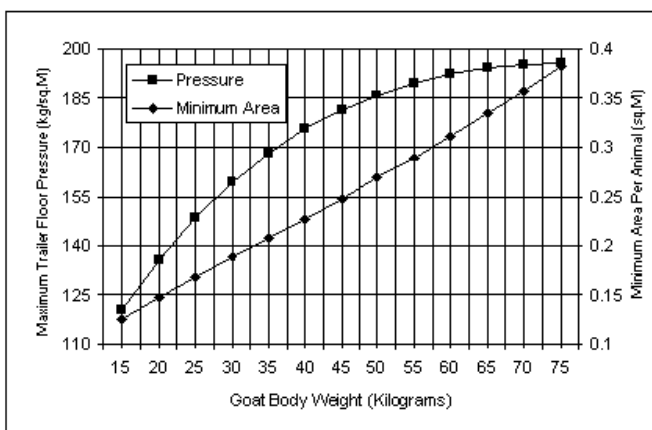
- Stop and check on the goats after the first hour of the trip and every 2-3 hours afterward.

#### Hot Weather

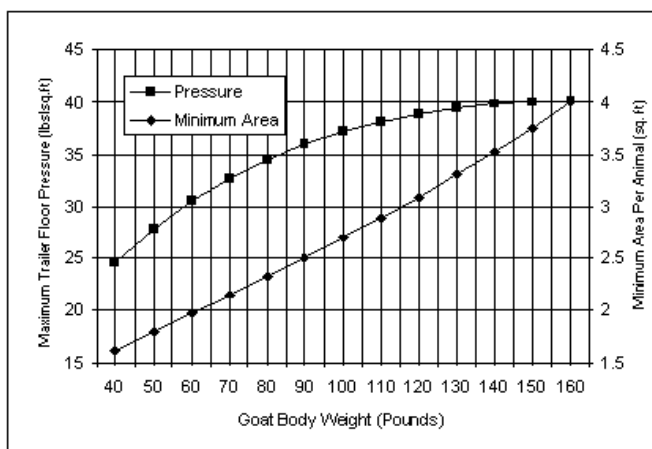
It is critical to have good ventilation available at all times when the goats are in the vehicle. In hot and, particularly, humid weather, be sure to take extra precautions to avoid causing heat stress in goats.

In hot conditions:

- Be sure there is no restriction on airflow through the vehicle. Avoid using internal barriers that will restrict air movement.
- Avoid overcrowding which can cause a severe heat build-up. Reduce the loading density by 15% from normal on hot/humid days.
- Schedule transportation for night or early morning when temperatures are cooler.
- Avoid times and routes with intense traffic congestion.
- Keep the frequency and length of stops to a minimum to prevent rapid buildup of heat inside the vehicle.
- Never park a loaded vehicle in direct sunlight.
- The upper limit of heat tolerance for goats is 35-40°C (95-104°F). Goats pant when they are overheated.
- Stop and check on the goats after the first hour of the trip and every 2-3 hours afterward.
- Watch for animals standing with their necks extended and breathing with open mouths, as signs of severe heat stress.
  - Revive a severely overheated goat by gently running cold water over the back of its head.



**STOCKING DENSITY (Metric):** Maximum trailer capacity for goats transported standing based on average individual animal weight. A 45 kg goat at 181.5 kg/m<sup>2</sup> has 0.25 square meters of floor space. Reduce loading density to 85% of maximum in hot humid weather and for trips in excess of 24 hours to allow room for goats to lie down.



**STOCKING DENSITY (Imperial):** Maximum trailer capacity for goats transported standing based on average individual animal weight. A 90 pound goat at 36 lbs./ft<sup>2</sup> has 2.5 square feet of floor space. Reduce loading density to 85% of maximum in hot humid weather and for trips in excess of 24 hours to allow room for goats to lie down.

meat quality. All the benefits of low stress loading and transport will be lost if goats are exposed to stressors before being processed. Stress burns up additional energy in muscles. Processing when muscle energy is low or being replenished can cause dark-cutting meat.

### Water and Feed

Fasting does help reduce carcass contamination by gut contents during processing; however, depriving goats of feed and water can also increase stress.

- Give goats access to water up to the time of loading for transport. They very rarely drink water during the holding period prior to processing.
- Provide access to feed during the holding period. Extended fasting due to prolonged holding of goats, especially during hot weather, increases stress in goats and can produce muscle damage that affects meat quality.

### LAMENESS CLASSES

*These categories can be used to determine the status of an animal's mobility, from normal to non-ambulatory.*

#### CLASS 1

Visibly lame but can keep up with the group; no evidence of pain.

#### CLASS 2

Unable to keep up; some difficulty climbing ramps. Load in rear compartment.

#### CLASS 3

Requires assistance to rise but can walk freely. Segregate. Load in rear compartment.

#### CLASS 4

Requires assistance to rise; reluctant to walk; halted movement. No steep ramps. Segregate. Load in rear compartment.

#### CLASS 5

Unable to rise or remain standing. Animal should not be moved, except with veterinary certification, using specialized equipment and in accordance with provincial regulations. Euthanasia or emergency on-farm slaughter.

### Grouping

Unfamiliar surroundings and isolation from other goats can make goats nervous. The new environment at the abattoir may be a stronger stressor than feed deprivation for goats. The longer they remain in isolation, the greater the emotional stress they experience.

- Allow goats to have constant visual contact with the goat in front of them to make handling easier and to reduce the animals' stress prior to processing.

### Summary

Low-stress transportation can improve the health and carcass quality of goats.

Everyone involved in transporting goats has a responsibility to reduce or eliminate potential stress factors. Use animal-friendly, low-stress

loading and holding facilities. Ensure driving habits will provide goats with a safe ride. Be sure vehicles are appropriate and comfortable for transporting goats. In addition, to maintain meat quality, provide goats with some water and feed and keep them from being isolated before processing.

*Craig Richardson, Animal Care Specialist*

*Ontario Ministry of Agriculture, Food, and Rural Affairs*

*This information was provided courtesy of OMAFRA Livestock Technology Branch and cannot be reprinted without permission.*



Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada

Canada

Agriculture and Agri-Food Canada (AAFC) is pleased to participate in the production of this publication. AAFC is committed with our industry partners to increase public awareness of the importance of the agriculture and agri-food industry to Canada. Opinions expressed in this document are those of the Canadian Meat Goat Association and not necessarily AAFC's. / C'est avec plaisir qu'Agriculture et Agroalimentaire Canada (AAC) participe à la production de cette publication avec nos partenaires du secteur nous nous engageons à sensibiliser davantage les Canadiens et Canadiennes à l'importance de l'agriculture et l'industrie agroalimentaire. Les opinions exprimées dans cette publication sont celles de l'association canadienne de la chèvre de boucherie et non pas nécessairement celles d'AAFC.