



Standards for the Raising and Handling of Dairy Cattle

BCSPCA
SPEAKING FOR ANIMALS

Standards for the Raising and Handling of Dairy Cattle

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1.0 INTRODUCTION

The SPCA Certified program is an independent, third party animal welfare certification system. SPCA Certified brings stakeholders together to further common goals in farm animal welfare. Products come from farms that have been annually assessed to BC SPCA farm animal welfare standards by trained, independent inspectors. Certification is then determined by third party, independent reviewers.

The BC SPCA believes that an animal's welfare is synonymous with its quality of life and that animals' health and emotions both contribute to their welfare.

While we acknowledge it is not possible to prevent animals from experiencing all pain or discomfort in their lives, BC SPCA standards strive to provide animals with the Five Freedoms, which are derived from those first described by the Farm Animal Welfare Council of the UK:

1. Freedom from hunger and thirst
2. Freedom from discomfort
3. Freedom from pain, injury and disease
4. Freedom from distress
5. Freedom to express behaviours that promote well-being

The Dairy Cattle Standard

The key components of the dairy cattle standard are:

- Space and an environment to move freely and exhibit natural behaviours
- Access to feed and water at all times and provision of feed that does not contain mammalian or avian derived protein, except for milk products
- Surgical procedures are regulated by age and through pain control
- Formalized lameness scoring protocols
- Development, implementation and maintenance of a Herd Health Plan for cattle health management

The BC SPCA *Standard for the Raising and Handling of Dairy Cattle* incorporates current research in animal welfare science with practical protocols developed by a Species Advisory Committee (SAC), an expert panel of animal welfare scientists, veterinarians, and farmers, in consultation with the BC SPCA. No endorsement by SAC members or their respective organizations is implied.

Standards are updated and amended by the SAC as new scientific information and improved animal care practices are developed and proven to enhance animal welfare. Further details regarding standard development and exemptions to the standard are in the program Operations Manual.

How to Use the Standard

This standard meets or exceeds Canada's *Code of Practice for the Care and Handling of Dairy Cattle* (2009).

- a) SPCA Certified program participants must have a thorough understanding of, and adhere to, the *Codes of Practice* and the additional requirements set out in this document.
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- b) Program members are required to follow federal and provincial acts and regulations related to environmental and food safety practices.
- c) **Mandatory Requirements*** are represented as **Must** do practices for program participation.
 - Any requirement set out in the Code of Practice for the Care and Handling of Dairy Cattle (2009) is also a mandatory requirement of the SPCA Certified program. The relevant page number from the Code is quoted in brackets if it has been duplicated in the text of this manual. In some instances, requirements of the SPCA Certified program have exceeded those of the Code.
- d) If a farm is not in compliance with a particular mandatory requirement, the Certification Body:
 - Expects the farmer to demonstrate how s/he intends to come back into compliance via an action plan, which must be developed and implemented. The Certification Body will use this action plan to benchmark the farmer's progress on the non-compliance issue. OR
 - May, depending on the severity of and/or failure to address the non-compliance issue, opt to decertify the farm.
- e) **Recommendations and Guidance** provide further information and, when appropriate, outline timelines for future standard requirements.

**Further detail on non-compliance issues can be found in the Operations Manual*

2.0 FEED AND WATER

2.1 Feed

- a) Feed must be available to animals every day.
- b) Cattle must receive a diet that will maintain health and vigor (Code Requirement p. 19).
- c) When dairy cattle are grazing (see Section 3.10 – Outdoor Access), pasture may be capable of meeting their nutritional requirements. However, care must be taken to ensure that pastured cattle receive a well-balanced, complete diet through pasture nutrient analysis and estimation of average dry matter intake when necessary. If pasture quality is poor, nutritional maintenance through feeding of quality forage and concentrate is required.
- d) Feed management must be well planned in order to ensure that cattle receive nutrition that will maintain appropriate body condition at each stage of production. Producers must take corrective action for animals seen at a Body Condition Score (BCS) of 2 or lower (Code Requirement p. 15). The Program requires that the 1 – 5 scale in Appendix B be used for assessing BCS.
- e) Feed must not contain mammalian or avian derived protein, with the exception of milk or milk products.
- f) Adding antibiotics to feed for purposes other than the therapeutic treatment of diagnosed diseases is prohibited. Coccidiostats will be permitted in the starter diet only, as calves are at a higher risk for coccidiosis at that time.
 - Hospital milk (i.e. milk from cows treated with medication) that contains antibiotic residues must not be fed to calves as the antibiotics it contains are not intended for the purpose of treating the calf and thus does not meet the requirements of this section.
- g) Provide salt/mineral supplements (e.g. blocks/licks) as required to meet the nutritional needs of the herd. Consult with a practicing veterinarian or nutrition specialist if unsure of what salt/mineral supplements are necessary for your herd.
- h) A list of supplements or additives to feed (other than vitamin/mineral mixes) must be presented to the Validator.
- i) Provide linear feed bunk space to meet the animals' nutritional needs (Code Requirement p. 10) and to allow every animal uninterrupted feeding. The Program requires the following feeding space allowances:

Age	Feed Space (cm/animal)	
	No Horns	Horned
Heifers (4 – 8 months)	30	37.5
Heifers (8 – 16 months)	45	56
Heifers and cows (from 16 months)	60	75
Pregnant dry cows stocked at <i>80% density</i> with this feed space	60	75
Pregnant dry cows stocked at <i>normal density</i> with this feed space	76	95

Recommendations and Guidance

It is recommended that feed space for fresh cows be the same as pregnant dry cows in the above table for the first 3-weeks after freshening.

In order to maintain appropriate body condition and to minimize metabolic disease, producers should:

- Monitor dry cows' feed intake and nutrient content to avoid excessive weight gain, which can cause calving difficulties.
- Feed dry cows a pre-lactation diet for two to three weeks before calving.
- Feed fresh cows a diet balanced to minimize the incidence of ketosis, and increase the concentrate gradually (e.g. by 0.5 – 0.7 kg per cow per day).

Body condition score should be kept below 4 to avoid reproductive problems and other associated disorders.

For subordinate animals, access to feed can be improved by using head gates or other partitions along the feed bunk to reduce competition, granted there are enough feeding places for all animals to eat simultaneously. Feed should be pushed up regularly to ensure cattle access all of it. It is recommended that producers set a schedule for this as part of their written standard operating procedures.

2.2 Water

- a) Cattle must have access to palatable and clean water in quantities to meet their needs (Code Requirement p. 19). Water must be provided at all times including when temperatures are below the freezing point.
- b) In barns, water troughs or bowls must be checked daily to ensure they are clean and working properly with adequate flow rate for cattle.
- c) On pasture, water troughs or bowls must be checked daily if they provide the sole source of water for cattle.
- d) Snow will only be considered a water source for non-lactating, healthy cattle on pasture if it is clean and in ample supply. **Although uncommon, producers who provide snow as a primary water source for these animals will be expected to phase in an alternate primary source within 2 years of certification.** Also see *Recommendations and Guidance*, below.
- e) Cattle must not be expected to walk farther than one mile (1.6 km) to access water.
- f) Waterers or troughs must allow 5% of each group to drink at any one time (~1 drinking place per 20 animals). A drinking place is defined as the space required by each animal while drinking (1.1 times shoulder width). Horned animals must have 25% more space at watering areas.
- g) A list of supplements or additives to water (other than vitamins/minerals) must be presented to the Validator.

Recommendations and Guidance

Pasture water sources require special management to reduce the destruction of land and creation of deep mud around them. Sand and concrete aprons are suggested in problems areas.

Although pasture water troughs may not be the sole source of water on pasture (i.e. other bodies of water may be accessible), it is recommended that they be checked daily. Farmers should not rely on snow as the primary source of water for pastured cattle.

Annual testing of water samples taken from animals' drinking sources is recommended to ensure safety and suitability as a drinking source.

2.3 Calves

- a) Calves must receive at least 4 litres of good quality colostrum (i.e. at least 50 mg/ml of immunoglobulins) within 12 hours of birth, with the first meal occurring as soon as possible and no later than six hours after birth (Code Requirement p. 17). The SPCA Certified program requires that this include male calves.
 - See Recommendations and Guidance (below) and Section 4.3 – Prevention of Disease and Injury for further information on validating colostrum quality and intake by the calf
 - Develop the tools that will be used to assess colostrum quality and efficacy in consultation with a veterinarian and in accordance with the herd health plan
- b) Calves not observed suckling from the dam must receive supplementary colostrum to ensure Section 2.3 (a) is achieved.
- c) Calves must receive a volume and quality of milk or milk replacer to maintain health, growth and vigor (Code Requirement p. 17). Calves must be offered a daily ration of at least 20% of their body weight in whole milk or equivalent milk replacer (approximately 8 litres per day for Holstein calves) until 28 days of age.
- d) Bottle feeding, teat buckets or similar methods/devices must be used to provide milk to calves that no longer suckle from their mother to satisfy their motivation to suck.
- e) Equipment (buckets, bottles, etc.) must be cleaned and disinfected after each use if used to feed multiple calves. Automated equipment must be cleaned according to the manufacturer's recommendations.
- f) Calves must have *ad libitum* access to fresh water and solid feed (roughage and concentrate) by 2 weeks of age.
- g) Heifer calves must not be completely weaned from milk (or milk replacer) until 7 weeks of age. This requirement applies to bull calves as well when kept within the operation.
- h) Weaning must be accomplished gradually over a minimum period of 5 days either by diluting the milk with water or reducing the milk volume.

Note: The 2009 *Code of Practice for the Care and Handling of Dairy Cattle* requires that milk be increased during cold stress (Code Requirement p. 17). This has not been listed here as a requirement due to the higher milk volume already required to be fed on all SPCA Certified dairy farms.

Recommendations and Guidance

Colostrum intake is critically important to calf health and welfare. Research on dairy herds has shown that inadequate colostrum intake is linked to increased disease and mortality rates in calves. The ability of calves to defend against disease is directly linked to the amount, quality and timing of colostrum intake. It is particularly important that calves receive colostrum soon after birth since their ability to absorb it is substantially reduced 6-8 hours after birth. When a colostrum replacement product is used it should deliver at least 125 g of immunoglobulin. Pasteurization of colostrum has been found to significantly improve day-old calf immunoglobulin (Ig) absorption

efficiency and increase blood Ig levels. See Section 4.3 – Prevention of Disease and Injury for further information on how to validate colostrum quality and calf intake.

Calves are highly motivated to consume large amounts of whole milk (8-14 litres) and their welfare depends on how much milk they consume. Whole milk has a higher protein, fat and digestible energy content than some commercial milk replacers. Higher amounts of milk can reduce the weight loss in the days after birth and this is associated with improved feed conversion efficiency. Higher milk intake by calves (by the calf's choice, not by force-feeding the calf) is not associated with increased health problems or diarrhea on well managed farms.

Feeding milk through a rubber teat mimics the natural suckling behaviour of nursing. Research indicates improved digestion and health of calves fed using nipples. Cross-sucking can be greatly reduced or eliminated if calves consume their milk ration via free access to a teat as this helps satisfy their motivation to suckle.

In summer, calves may start consuming solid feed sooner than 2 weeks of age. Producers should make roughage and concentrate available to calves sooner in the summer.

It is recommended that calves be weaned gradually over a period of 5-14 days (Code Recommendation pg. 17).

3.0 ENVIRONMENT

3.1 General

- a) Feed and water must be available in all areas housing animals.
- b) All cattle (including bulls) must be housed within sight, sound and smell of other cattle.
- c) Pens must be designed to ensure the comfort, hygiene and health of all animals.
- d) All animals must have access to well drained and well maintained bedding.
- e) Flooring must be regularly maintained to prevent the accumulation of manure or urine.
- f) Floor surfaces must provide solid and stable footing and good traction to prevent slipping.
- g) Housing cattle on fully slatted floors or bare concrete is prohibited. Slatted floors are permitted in loafing/waiting areas and alleyways.
- h) The use of tie stalls is prohibited.
- i) Fixed brushes or the like must be provided in barns to give cattle the ability to groom themselves.

Recommendations and Guidance

As a guide, bedding is too wet if your knees feel wet after 25 seconds of kneeling in the area.

Producers could consider the option of softer, rubber flooring, particularly in areas where animals spend the most time standing (e.g., in front of the feed bunk and the parlour holding area).

3.2 Space Allowances

- a) All cattle must have space and freedom to lie down in their normal resting posture, stand up, stretch their limbs and turn around freely. For cattle housed in pens, space must be provided for all cattle to lie down and rest comfortably in loafing areas at the same time.
- b) In individual calving pens, 15 m² (160 ft²) per cow of resting area must be provided.
- c) For heifers, milking cows and dry cows, resting areas must provide at least 11 m² (120 ft²) per mature cow in bedded-pack pens (Code Requirement p. 10). The Program requires this also apply to composted-pack pens.
- d) Mature bulls must have at least 18 m² (200 ft²) of total space. The bedded area of the pen must be at least 16 m² (172 ft²).

3.3 Maternity Housing / Calving Pens

- a) Cows must be moved to a calving pen when signs indicate that calving is imminent.
 - b) Calving pens must be separate from the milking herd.
 - c) Calving pens must be fully bedded and dry to ensure cow comfort and stable footing.
 - d) The calving area must be kept clean prior to, and after, delivery of the calf to minimize the risk of disease or bacterial challenges to the calf's immune system (Code Requirement p. 26).
 - e) Remove and dispose of dead calves and afterbirths in accordance with government regulations (or recommendations where regulations do not exist) and in such a way that cattle and predators will not have access to them.
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3.4 Calf Housing

- a) Housing must allow calves to easily stand up, lie down, turn around, adopt normal resting postures and have visual contact with other calves (Code Requirement p. 5). It should be noted that calves occasionally opt to lie on their sides with their legs extended, so space allowance must accommodate this.
- b) Calves must have a bedded area that provides comfort, insulation, warmth, dryness and traction (Code Requirement p. 5). Bare concrete is not acceptable as a resting surface (Code Requirement p. 5).
- c) The bedded area for group-housed calves must be large enough to allow all calves to rest comfortably at the same time (Code Requirement p. 5).
- d) Calf hutches are permitted under the following conditions:
 - Ensure comfortable temperatures can be maintained inside the hutch (see Appendix F – Temperature-Humidity Index for information on temperature-related stress). Position hutches to minimize impacts of weather extremes on the calf (e.g. out of cold wind, under shaded areas, etc.)
 - The space allowance must comply with Section 3.2 and 3.4 (a).
 - Bedding must be available as per Section 3.4 (b).
 - Calves must have access to a run or penned area beyond the hutch. Tethering / restricting calves to hutches is prohibited.
 - Hutches must be positioned so that calves can see, smell and hear other calves.
- e) Calves must be pair or group housed by the time they are weaned from milk or milk replacer, or by 8 weeks of age, whichever is sooner.

Recommendations and Guidance

Calves are social, herd animals and group pens provide them with the opportunity to move about, socialize and express natural behaviours. Recent research indicates that disease control can be just as effectively managed for small (< 7) groups of calves as it can for individually housed calves. Findings indicated that disease transmission was more dependent on housing system management (e.g. cleanliness, ventilation, feeding) and calf immunity than on the housing system itself (i.e. group versus individual).

3.5 Housing for Heifers, Milking Cows and Dry Cows

- a) Housing must allow all cattle to easily stand up, lie down, adopt normal resting postures, and have visual contact with other cattle (Code Requirement p. 6).
 - b) Cattle must have a bed that provides comfort, insulation, warmth, dryness and traction (Code Requirement p. 6). Bare concrete is not acceptable as a resting surface (Code Requirement p. 6).
 - c) Freestall barns:
 - One stall must be provided for each cow
 - Corrective action must be taken when animals reject, become stuck in or lay half-in/half-out of stalls
 - Stalls must be regularly bedded and raked out so they are clean and dry
 - Mattresses or rubber mats – beds must be topped with at least 2.5 cm (1 inch) of bedding material
 - Bedded stalls – at least 8 cm (3 inches) of bedding material must be provided
 - d) Build stalls to minimize hock and knee injuries and to allow cows to rise and lie down with ease (Code Requirement p. 10).
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- e) Daily removal of cow patties and use of generous amounts of bedding assures cleanliness of cows kept in bedded-pack pens (Code Requirement p.11).

3.6 Bull Housing

- a) Housing must allow bulls to easily stand up, lie down, adopt normal resting postures and mount safely (Code Requirement p. 14).
- b) Bulls must have a bed that provides comfort, insulation, warmth, dryness and traction (Code Requirement p. 14).

Recommendations and Guidance

Aggressive behaviour increases with age. For this reason, farmers may wish to discontinue group housing of bulls around 3 years of age. Smaller or subordinate bulls should be removed from the group. If removed for more than 3 hours, a bull should not be returned to the group. Note: when housed alone, bulls must still be housed within sight, sound and smell of other cattle (see 3.1 b).

3.7 Ventilation and Air Quality

- a) Cattle must be provided with fresh air through effective ventilation programs and maintenance of barn conditions, such that aerial contaminants are not noticeably unpleasant to a human observer. Effective ventilation rates will help to ensure proper circulation of fresh air throughout the animal's indoor environment, and exhaustion of air contaminants (e.g. dust and gases) to the barn's exterior.
- b) Ammonia concentrations must be < 25 ppm at cattle head height. Ammonia levels must be measured and recorded monthly using automated equipment or litmus paper test kits available through the Certification Body. These records must be made available to the Validator.
- c) Special attention to ventilation in barns is required in the summer months.
- d) Care must be taken to avoid creating a draughty environment in the barn.

Recommendations and Guidance

The Certification Body will provide a litmus paper test kit to certified members for use in measuring ammonia levels.

3.8 Lighting

- a) Lighting programs must allow cattle access to normal periods of daylight and darkness (low light).
 - b) Natural lighting of barns must allow for assessment of cattle and their surrounding environment at any location in the barn during daylight hours. Indoor artificial lighting (e.g. light bulbs) must allow for assessment of the herd and the surrounding environment at any location in the barn during daylight hours when natural daylight is insufficient. See *Recommendations and Guidance* below for suggested lighting levels in different areas of the barn.
 - c) For barns that do not have a source of natural lighting (e.g. windows, doors, open sides), an implementation plan must be submitted to, and approved by, the Certification Body. The implementation period cannot exceed 5 years.
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- d) At night time, it is not required that lights remain on; however, lighting must be available for use should it be required. Portable lighting sources (e.g. lamps, flashlights) are acceptable for non-electrified facilities.

Recommendations and Guidance

Examples of natural lighting sources that could be added are windows, doors, open-sided barns, etc. Recommended lighting levels for different areas of the dairy barn are as follows:

Area of the barn	Recommended Lighting Level*	
	Foot-Candles (lumens/ft ²)	Lux
Freestall feeding area	20	215
Housing and resting area	10	108
Holding area	10	108
Treatment and maternity area		
General lighting	20	215
Surgery	100	1076
Milking parlour		
General lighting	20	215
Washing area	50	538

*1 foot-candle (fc) = 10.76 lux

ASAE (1997)

3.9 Sanitation and Waste Management

- Producers must remove manure from alleys and beds to keep cows clean (Code Requirement p. 28).
- By-products such as manure, bedding and carcasses must be managed and disposed of in accordance with all relevant government regulations (or recommendations where regulations do not exist).
- Any facilities housing cattle must be cleaned between occupants/groups.

Recommendations and Guidance

Where possible, facilities should also be disinfected between occupants/groups.

3.10 Outdoor Access

- Cattle (including bulls) must have the option of accessing pasture or an outdoor area that provides good footing from 9 months of age for a minimum of 150 days per year and a minimum of 4 hours per day during the grazing season (weather permitting). If pasture is not available, farmers must provide access to a non-concrete exercise yard (i.e. dry lot) or a well-maintained bedded pack. Exceptions to this requirement are allowed for:
 - Animals whose health and welfare would be jeopardized

- Animals that are sick or injured and require segregation
 - Unforeseen/exceptional risks relating to soil, water or plant quality
- Evidence must be provided as to why an exception should be granted.
- b) Outdoor areas must allow all cattle to easily stand up, lie down and adopt normal resting postures in addition to allowing them to perform natural social behaviours.
 - c) Cattle must not have to walk excessive distances to reach pasture. See *Recommendations and Guidance*, below.
 - d) Pasture/yards must provide access to clean drinking water (See Section 2.2 – Water). Cattle must not be required to walk more than 1.6 km to access water (See Section 2.2 e – Water).
 - e) For nutritional requirements on pasture, refer to Section 2.1 – Feed.
 - f) Smooth wire, barbed wire and electric fencing are all acceptable for field fencing of pastures. Electrifying barbed wire fencing is prohibited. All forms of fencing must be maintained to avoid injury.
 - g) Cattle density on pasture or in yards must not be so high that cattle health and/or safety is compromised. Pasture/yards must be maintained to minimize the risk of injury and disease to all cattle. Give particular attention to frequently used paths to ensure they are maintained in a condition that does not damage the feet of cattle.
 - h) Cattle density on pasture must ensure soil/pasture productivity by:
 - Preventing damage to soil/pasture quality via degradation, destruction or over-grazing. Particular attention must be given to paths frequently used by cattle, riparian areas and areas around other water sources.
 - Preventing overloading of manure nutrients on land or to water sources via run-off, leaching or direct contamination – ensure compliance with relevant government nutrient management regulations
 - i) Cattle density on pasture must also consider local conditions and feed production capacity.
 - j) To ensure animal comfort:
 - All cattle must have access to natural or artificial shelter and shade when outdoors to protect them from direct sunlight, high humidity and heat stress during hot seasons (when the Temperature-Humidity Index is greater than 72 – see Appendix F)
 - All cattle on pasture must have access to natural or artificial shelter and windbreaks to protect them from wind-chill effects during cold seasons
 - Cattle showing signs of cold or heat stress must be attended to immediately

Recommendations and Guidance

Outside the grazing season, it is recommended that cattle still be allowed access to the open air, outdoor exercise areas or pasture, weather permitting. Exceptions should be allowed for:

- Animals whose health and welfare would be jeopardized
- Animals that are sick or injured and require segregation
- Risks relating to soil, water or plant quality

It is recommended that cattle not be required to walk long distances (over 1.6 km) to access pasture (i.e. the maximum distance permitted to access water).

Stocking density on pasture should not exceed 30 cattle per hectare (12 cattle per acre). This may vary somewhat depending on local conditions. Consideration should be given to Section 3.10 (g, h

and i). Farmers are encouraged to develop an Environmental Farm Plan with their local government body.

Cattle are social animals. Research indicates that cattle have more opportunities to socialize and express natural behaviours on pasture than they would in barns.

Research has shown that foot and leg health are poorer and lameness rates are higher among indoor-housed cattle. Pasture access has been proven to reduce lameness. See Section 4.5 – Monitoring Lameness, Leg and Food Health.

Pasture management should aim to provide high quality forage. Sustainable pasture management practices, such as rotational grazing, should be employed. It is recommended that pasture supply the majority of cattle dry matter intake and nutritional requirements during the grazing season.

Signs of heat stress include reduced feed intake and an increase in water intake, respiration rate/panting and/or body temperature.

4.0 HEALTH AND BIOSECURITY

4.1 General

- a) Cattle that are sick, injured, in pain or suffering must be provided immediate medical care or be euthanized (Code Requirement p. 27).
- b) Cattle with untreatable conditions, not responding to treatment, or not fit for transport must be immediately euthanized (Code Requirement p. 27). See Section 6.3 – Fitness of Cattle for Transport and Section 7.0 – Euthanasia and Slaughter of the *SPCA Certified Standards for the Raising and Handling of Dairy Cattle*.
- c) Appropriate authorities must be advised of any suspect or confirmed cases of reportable disease (Code Requirement p. 27).
- d) Apparatus to lift and support recumbent animals must be used with care and according to manufacturer's specifications (Code Requirement p. 27).
- e) Areas must be provided to segregate and treat sick and injured cattle (Code Requirement p.8).

4.2 Herd Health Plans

- a) Producers must establish a working relationship with a practicing veterinarian (Code Requirement p. 22). See the Canadian *Code of Practice for the Care and Handling of Dairy Cattle* (p. 22) for the conditions that must be met in order for a Veterinarian/Client/Patient Relationship (VCPR) to exist.
- b) A written Herd Health Plan must be implemented by the farm manager and submitted to the Certification Body for review. The Certification Body has developed a template health plan that is available as a resource.
- c) The Herd Health Plan must be updated after a major health incident (e.g., disease outbreak) and/or when a significant change to the production system is made (e.g., introduction of new species to the farm, facility changes, etc.).

Recommendations and Guidance

The herd health plan should be reviewed and updated at least once annually.

4.3 Prevention of Disease and Injury

- a) All reasonable efforts must be made to keep cattle free of disease and injury. Records of lab testing or other diagnostics must be kept on farm and may be requested by the Certification Body as part of the Herd Health Plan.
 - b) Conduct on-farm vaccinations in accordance with the herd health plan, which is to be written in consultation with a veterinarian (Refer to Section 4.2 – Herd Health Plans).
 - c) Complete and accurate production, health and breeding records must be kept for each animal.
 - d) Complete and accurate records must be kept of all vaccines, drugs and treatments (e.g. homeopathic medicines) used.
 - e) Pharmaceutical products may only be used therapeutically to treat diagnosed illnesses or conditions.
 - f) Use of vaccines, drugs and other treatments (e.g. homeopathic medicines) other than as indicated on the label is prohibited, unless prescribed by a veterinarian.
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- g) Calf blood serum immunoglobulin (Ig) levels must be analyzed to ensure the calves are receiving enough colostrum to maintain health and vigour, and that colostrum is of good quality. Blood sample analysis must be conducted at least once per year on blood samples from 10-12 randomly selected calves at 24 hours to 7 days of age.
- If analyzing total serum protein: At least 80% of calves sampled must have 5.5 g/dL total serum protein, or more.
 - If analyzing blood serum Ig levels: At least 80% of calves sampled must have 10 mg/ml blood serum Ig, or more.
 - A copy of the results must be kept on file at the farm as part of the Herd Health Plan. These records may be requested by the program Validator or the Certification Body.
 - See Recommendations and Guidance below for more information.

Recommendations and Guidance

Calf blood sampling/testing: Good colostrum intake and colostrum quality can be validated via immunoglobulin (Ig) levels in calves' blood using blood samples taken 24-48 hours after colostrum feeding. Blood serum Ig levels lower than 10 mg/ml indicate poor intake or poor quality colostrum. On-farm testing of calves' blood serum Ig concentration can be done with a kit such as the 'Midland Quick Test Kit'. A veterinarian can also perform the test for a nominal fee. Veterinary tests often measure total protein levels in blood serum, which correlate to Ig content. Generally speaking, a farm has good quality colostrum and good calf intake if over 80% of calves tested have 5.5 g/dL total serum protein, or more.

While the program requires that farmers conduct blood sample analyses at least once per year on blood samples from 10-12 randomly selected calves 24-48 hours after birth, the farmer may opt to test more frequently if s/he chooses. More frequent testing may be of value if there are problems with calf health or if there have been past issues with colostrum quality. If additional testing is conducted, it is recommended that the frequency of testing be increased rather than the sample size (e.g. test 10-12 calves 5 times/year rather than testing 50 calves at once). It is the best interest of the farmer to test a random sample of calves that will include healthy and poor-doe calves as this will give an unbiased view of colostrum quality and consumption on farm.

Colostrum testing: An alternative method for measuring colostrum quality is colostrum testing. Colostrum can be tested using a colostrometer, which is a relatively inexpensive testing device that can be used on-farm. This test may be of increased value following calf blood testing that indicated poor blood Ig or protein levels because it will single out whether the cause was due to poor quality colostrum or poor calf intake. Good quality colostrum will have at least 50 mg/ml of Ig. If colostrum quality is proven to be inadequate, colostrum of acceptable quality should be sourced and used.

Producers should adopt a parasite control program based on the recommendations of their veterinarian and the level of risk in their region.

Producers are urged to select bulls for traits that contribute to animal welfare, including calving ease, mastitis resistance, low incidence of metabolic disorders, and good conformation of feet and legs.

4.4 Monitoring Herd Health – General

- a) Each animal must be observed at least once daily for signs of:
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- Physical injury
 - Foot health and lameness (see Appendix C for lameness scoring guide)
 - Infectious diseases such as mastitis and metritis
 - Metabolic diseases such as ketosis, milk fever, and acidosis
 - Parasites
 - Body condition scores that are not common for a particular stage of production (see Appendix B for the body condition scoring guide)
- b) Any injury or disease must be treated immediately. Examine cows that appear sick or lethargic and have reduced milk production for possible health issues.
- c) Incidences of euthanasia and culling for health or reproductive reasons must be recorded along with the reason. These records must be available to the Validator.

4.5 Monitoring Lameness, Leg and Foot Health

- a) Each animal must be routinely (according to your farm's herd health plan) observed for signs of hock lesions, claw lesions and lameness. Injuries must be treated immediately and recorded as part of the medication/treatment log.
- b) Feet and claws must be inspected and trimmed as required to minimize lameness (Code Requirement p. 35). Hoof trimming must be done by a competent individual.
- c) Overall herd clinical lameness (> score 3 as per Appendix C) must not exceed the following maximum permitted levels at any given time:

Clinical Lameness	Maximum Permitted	Goal
Total (all cattle)	13 %	< 10 %
Cattle with score 5	< 1 %	0 %

- An average of Canada-wide research data on lameness rates among free-stall housed cows was used to ascertain the maximum permitted and goal percentages
- Percentages refer to the entire herd, including cows housed in sick pens and breeding bulls
- Severely lame cows (score 5) should be a rarity. These cows must be segregated to a sick pen with ample bedding and housed as close as possible to the milking parlour.
- See Appendix C for the lameness scoring guide (scale scores 1 – 5)

Lameness will be assessed by Validators using the lameness scoring protocol (5-point scale) described in Appendix C. The Validator will conduct the assessment on a sample of high producing lactating cows as they return from the milking parlour because they are more likely to be lame than lower producing cows. If scores exceed the thresholds listed in the table at the time of inspection, corrective action must be taken by the producer.

- d) Lameness must be diagnosed early and either treated, culled or euthanized on site (Code Requirement p.23). This must be recorded as part of the herd health records. If culling off-farm occurs, refer to Section 6.3 – Fitness of Cattle for Transport. See Appendix C for course of action.
- e) If hock (tarsal joint) lesions exceed the following levels, corrective action (e.g. changes to housing, bedding or follow up with a vet) must be taken. If cows are grouped by

production level, the assessment is to be conducted on the highest producing group of lactating cows as they are more likely to have hock lesions than lower producing cows.

Hock Score	Maximum Permitted	Goal
Total (all cattle)	23 %	< 20 %
Cattle with score 3	5 %	< 1 %

- An average of Canada-wide research data on hock lesions among free-stall housed cows was used to ascertain the maximum permitted and goal percentages
 - Percentages refer to the entire herd, including cows housed in sick pens and breeding bulls
 - See Appendix D for the hock lesion scoring guide and diagrams (scale scores 0 – 3)
- f) Examine other areas of the cattle's body and legs (e.g. carpal joints) for lesions and/or abrasions as well. Treat as medically necessary.

Recommendations and Guidance

Lameness is painful and results in decreased feed intake, reduced milk production, impaired reproduction, and early culling. Producers can reduce the occurrence of lameness in their herds by:

- Minimizing exposure to concrete floors, along with increasing time on good quality, dry pasture, consider bedded pack and composted pack barns.
- Keeping all walking areas clean and dry. Flooring should be non-slip to improve traction.
- Using footbaths to clean and sanitize hooves (e.g. at milking parlour entry or exit) – consult a vet on best practices for use of footbaths.
- Ensuring stalls are spacious and comfortable, that cows are lying in the stalls and that they are able to rise and lie down without encumbrance.
- Balancing the feed ration to prevent sub-clinical rumen acidosis and providing excellent bunk management with good feed access and frequent feed push-ups.
- Avoiding feeding large amounts of concentrate in a single feeding.
- Providing fresh feed more often throughout the day.
- Develop a lameness prevention strategy with input from experts such as your veterinarian and nutritionist.

It is recommended that producers incorporate the formal lameness scoring protocol in Appendix C into their standard operating procedures and that these records be kept on file.

It is recommended that hooves of all cows be inspected and trimmed at least twice a year (at 6-month intervals) by an experienced trimmer. Six-month intervals should typically occur at drying off and when the cow is in mid-lactation (90-150 days in milk). Cows with pre-existing hoof disease may require attention more frequently (e.g. every 2-4 months).

Producers are urged to discuss options for pain control with their veterinarian as part of their treatment protocols for lame cows.

4.6 Monitoring Mastitis

- a) Cows with mastitis must be treated immediately.
- b) Mastitis incidences/treatments must be documented in the on-farm treatment record. These records must be made available to the Validator.
- c) Clinical mastitis (see *Recommendations and Guidance*, below) must not be present in more than 15% of cows per lactation. If these thresholds are exceeded, a veterinary visit is required. A copy of the veterinarian's report, including causes and suggested strategies/plans to prevent or minimize recurrence, must be submitted to the Certification Body.

Recommendations and Guidance

Clinical mastitis: Refers to mastitis that leads to obvious changes in the milk, the infected udder quarter or the animal.

Removal of the foremilk (i.e. "teat stripping" or "fore-stripping" – milking out the first few squirts of milk from each teat onto a clean surface) is a good management practice to view/assess milk quality just prior to milking to determine whether a cow has clinical mastitis. If the foremilk appears visibly different (e.g. clotted), then it is a sign the cow may be developing mastitis and requires treatment.

Subclinical mastitis: Does not usually cause obvious changes in the animal or milk. It can only be identified using a test, such as the California Mastitis Test (CMT), to measure the Somatic Cell Count (SCC) in milk. SCC can also be accomplished by measuring the electrical conductivity of milk, which is more accurate than the CMT test.

The following table relates CMT values to SCC in milk of individual animals:

CMT Score	Gelling	Approximate SCC/ml
0	None	100,000
Trace	Slight	300,000
1	Forms distinct gel	900,000
2	Quickly forms a distinct, firm gel	2,700,000
3	Distinct gel that moves to the centre and away from the edge	8,100,000

Excerpt from the *Canadian Quality Milk On-Farm Food Safety Program Reference Manual* (2010), page 3-12.

It is recommended that farmers aim to maintain SCC of bulk tank milk below 200,000 SCC/ml (Code Recommendation pg. 24).

Post-milking disinfection of teats is a management practice that greatly reduces the incidence of mastitis. Milking equipment hygiene and hand hygiene of milkers is also important. Equipment should be sanitized after each herd milking. Frequent hand washing before and throughout the milking process will help to reduce the spread of mastitis or infectious agents. For additional information regarding methods for reducing mastitis, consult with your veterinarian.

4.7 Monitoring Mortality Rates

- a) Mortalities (including stillbirths and animals lost to predation) and euthanized animals must be recorded with reasons, if known. These records must be made available to the Validator.
- b) If reason for mortality is suspicious, send dead animals for diagnostic testing (as per the herd health plan; see Section 4.2 – Herd Health Plans).
- c) The following table outlines maximum mortality thresholds. If these thresholds are exceeded a veterinary visit is required. A copy of the veterinarian's report, including causes and suggested strategies to prevent or minimize recurrence, must be submitted to the Certification Body.

	Maximum Prevalence
Calf mortality – pre-weaning	5 %
Calf mortality – post-weaning	0.5 %
Herd mortality (mature cattle)	2 % per year

Numbers include animals that die or are euthanized on farm. Numbers also include those animals culled or shipped for reasons of poor health.

4.8 Biosecurity

- a) Farms must have a written biosecurity plan to minimize the risk of introducing disease to the herd. The plan can be simple or complex, depending on the level of risk on the farm.
- b) It is the farmer's responsibility to ensure visitors to the farm follow protocols described in their biosecurity plan.

Recommendations and Guidance

The Certification Body has developed a template biosecurity plan that is available as a resource. Farmers may submit their own plan provided it addresses the information requested in the Certification Body's template.

Biosecurity plans can be developed using an industry-approved program, such as the Dairy Farmers of Canada *Canadian Quality Milk Program*.

All guests, personnel and Validators should sign a visitor log-book in order to assist in on-farm disease tracking/control. The log-book should indicate when the last contact with another dairy farm occurred. It is recommended that all visitors to the farm be free from contact with other cattle within the 72-hour period prior to their visit.

People should have access to foot dips or dedicated footwear, and disinfectants for washing hands must be accessible at each barn to avoid cross-contamination, especially if different species, ages or sources of cattle are located on the same site. Guests should be encouraged to wear footwear and clothing (e.g. plastic booties or disinfected rubber boots, clean cover-alls, etc.).

5.0 MANAGEMENT

5.1 General

- a) Farm records must be kept up to date. See Appendix A for a list of all required records.

5.2 Staff Knowledge and Training

- a) Farm staff with responsibility for animals must have access to a copy of and be familiar with the *SPCA Certified Standards for the Raising and Handling of Dairy Cattle* and the *Canadian Code of Practice for the Care and Handling of Dairy Cattle*.
- b) Farm staff with responsibilities for handling cattle must be knowledgeable of the normal and abnormal behaviours, common diseases and physical and psychological needs of the animals, as well as management techniques and skills in handling cattle and performing common procedures.

5.3 Surgical Procedures – General

Discuss protocols for painful practices with a veterinarian, including the method used and options for pain control. When selecting a method and pain control protocols, give consideration to the following:

- Local anesthetics reduce the pain caused during the procedure but do not provide adequate post-operative pain relief.
- The use of analgesics (e.g. ketoprofen, meloxicam) in addition to an anesthetic or sedative minimizes pain and stress in the hours that follow and is therefore strongly recommended for any procedure.
- The use of a sedative (e.g. rompun) makes the animal calmer and easier to handle/restrain.
- Post-surgery, segregate animals in a separate hospital pen with a clean, spacious, bedded lying area so they are allowed time to recover.

Recommendations and Guidance

It is recommended that painful procedures be performed at the same time to reduce the stress associated with multiple handlings. This will also enable producers to make the most efficient use of pain medications administered/required for these procedures.

Avoid conducting surgical procedures at the same time as weaning to reduce stress.

5.4 Surgical Procedures – Disbudding and Dehorning

For the purposes of these standards, the following definitions will apply:

- Disbudding: removal of the horn buds prior to 3 weeks of age (permitted)
 - Dehorning: removal of the horns/horn buds after 3 weeks of age (prohibited)
- a) Only disbudding (before 3 weeks of age) is permitted. In order to avoid interference with colostrum intake, disbudding must not be performed on the first day of life.
 - b) Before performing disbudding, the animal must be restrained, sedated or both.
 - c) The person performing disbudding must be trained and experienced in the procedure and must use accepted veterinary techniques. The method of disbudding must be
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- appropriate for the size of the horn bud and the age of the animal. Discuss with a practicing cattle veterinarian to ensure the appropriateness of the intended method prior to performing the procedure.
- d) Pain medication must be used when disbudding (Code Requirement p. 32). Pain control must include a local anesthetic (e.g. lidocaine) in combination with an analgesic (e.g. an NSAID such as ketoprofen or meloxicam). Consult an experienced veterinarian to determine the best practices for your operation.
 - A sedative is also permitted at the option of the farmer or veterinarian, in addition to the local anesthetic and analgesic.
 - Disbudding using caustic paste is preferred over cautery (heat) and cutting methods.
 - See *Recommendations and Guidance* below
 - e) Care must be taken to ensure disbudding is done correctly to avoid re-growth. Instances requiring dehorning due to re-growth must be recorded as part of the treatment record.
 - f) Dehorning (past 3 weeks of age) is prohibited. In rare cases where dehorning is absolutely necessary (e.g. due to a failed attempt to disbud), it must be performed by an experienced veterinarian.
 - The animal must be restrained, sedated or both
 - Bleeding control must be used (Code Requirement p. 32)
 - Pain control must be used (Code Requirement p. 32). Both a local anesthetic (e.g. lidocaine) and an analgesic (e.g. an NSAID such as ketoprofen or meloxicam) are required. A sedative is permitted at the option of the farmer or veterinarian.
 - g) For producers managing horned dairy cattle, routine tipping of horns is prohibited. Producers may request permission to perform tipping on an individual animal if they are unable to control aggression through contributing factors such as group size, feeder space and lying space. Producers must monitor horned cattle, and, if there is concern that the horns may grow into the animal's head, the Certification Body must be contacted to discuss tipping. If tipping is approved and performed, only the non-living horn material may be removed.

Recommendations and Guidance

Producers are strongly encouraged to breed to polled genetics to avoid the need for disbudding. The polled gene is dominant over the horned gene, making it easy to produce polled calves from horned cows reliably. Research has found that polled cattle reproduce and perform just as well as horned breeds.

Disbudding is much less invasive than dehorning and poses a lower health risk to the animals, which is why it is permitted and dehorning is not. Performing disbudding within the first week of life is even better than at 2 or 3 weeks of age and is recommended because healing times are faster and health risks are lower among younger animals. Producers are strongly encouraged to use a combination of sedative, local anesthetic and an analgesic when performing disbudding because of the high level of pain and stress cattle experience during the process. Research indicates that the pain caused by caustic paste disbudding is much easier to control than the pain caused by burning or cutting methods.

Exercise care when applying caustic paste. Trim the hair around the horn bud first. Paste must only be applied to the horn bud, taking care to rub it in well. Apply petroleum jelly in a ring around the horn bud to prevent the paste from running off and burning skin or eyes. It is not recommended that this procedure be carried out in wet conditions. Follow product or veterinary

recommendations for how long treated cattle should be isolated to prevent accidental caustic (chemical) burns to other animals.

With any method of disbudding, skill and experience of the person performing the procedure is of the utmost importance. If performed incorrectly:

- Excessive heat from hot irons can damage underlying bone and tissues
- Gouge methods pose an increased risk of sinusitis, bleeding, prolonged wound healing and infection, especially in adult cattle
- Runoff of caustic materials can burn surrounding skin or eyes for as long as the chemical remains in contact with the area. Penmates are at risk of accidental caustic burns as they may rub against the chemically treated horn buds of a recently disbudded animal.

5.5 Surgical Procedures – Castration

- a) Although uncommon on dairy farms, if castration is performed, producers must ensure it is performed only by a skilled and competent operator using one of the approved methods described in this section.
- b) In order to avoid interference with colostrum intake, castration of bull calves must not be performed on the first day of life (day 1).
- c) All methods of castration are painful at any age. Pain control must be used when castrating (Code Requirement p. 33). This pertains to cattle of any age. The following table provides a list of accepted methods of castration with associated age and pain medication requirements.

Method	Age	Required Pain Medication(s)	Further Guidance
Surgical (knife/scalpel)	2 - 21 days	local anesthetic AND analgesic	Consider using bleeding control and sedation.
Rubber ring / banding	2 - 21 days	can choose local anesthetic OR analgesic	Although producers have the choice of which pain medication to use, it is recommended that both be administered when possible.
Clamp (burdizzo)	2 - 21 days	can choose local anesthetic OR analgesic	Although producers have the choice of which pain medication to use, it is recommended that both be administered when possible. See below for further <i>Recommendations and Guidance</i> .
Any method	> 21 days	local anesthetic AND analgesic	Must consult with a veterinarian first. Use a method of bleeding control for surgical methods. Also consider sedation.

- Local anesthetic: e.g. Lidocaine. Must be injected at the site of the procedure (i.e. locally). Consult with your veterinarian about appropriate injection site, timing and procedure.
- Analgesics: e.g. Non-steroidal anti-inflammatories (NSAID) like ketoprofen or meloxicam. Consult with your veterinarian regarding appropriate injection site, timing and procedure.
- Should farmers find it difficult to meet the requirements of this section, they are encouraged to contact the Certification Body for guidance.

Recommendations and Guidance

If planning to disbud calves, castration and/or other painful procedures should occur at the same time. This will reduce the stress caused by handling because producers will only have to handle the calves once instead of multiple times. Since both a local anesthetic and an analgesic are required for disbudding, producers will not need to re-medicate with analgesia if performing castration at the same time, and it will be easier to give a second dose of local anesthetic in the testicles because the animal is already restrained. See Section 5.4 – Surgical Procedures - Disbudding and Dehorning.

Castration is painful at any age; however, research indicates that castration is less painful when performed before 7 days of age than at an older age. Research also indicates that weight loss resulting from castration is more drastic in older animals.

Producers are strongly encouraged to provide both a local anesthetic and an analgesic regardless of the method of castration chosen. When planning the method of castration, consideration should be given to the amount of acute pain caused by the procedure as well as the amount of pain/discomfort that persists after the procedure due to wound healing and inflammation.

The rates of wound healing differ with the method of castration. Generally, surgical (knife) methods are more acutely painful in the hours following the procedure but the superficial wounds (i.e., those on the outer layer of skin) heal faster compared to other methods. The rubber ring and burdizzo methods are less acutely painful, but are associated with longer healing times. The pain control protocols required in the standard above will effectively mediate the pain in the hours following castration, but may not control longer lasting discomfort. Producers should take both into account when selecting a method suitable for their herd and operation.

The clamp causes less pain than the rubber ring because it destroys the nerves more quickly, thus reducing pain impulses below the crushed point. To be effective, the clamp must be applied for 10 seconds across the width of each cord. Clamp each cord separately. Clamping each cord individually allows more precision – you can manipulate one testicle into the scrotum at a time – and prevents accidental crushing of a testicle or the urethra. Furthermore, there is a thick piece of tissue running down the center of the scrotum that can prevent the burdizzo from completely closing when attempting to clamp both testicles at once, thus preventing complete destruction of the two cords. The clamp can be applied either proximal or distal to the rubber ring (see diagram below); however, research suggests this method is less painful if the clamp is applied proximal to the ring. Note: Added care should be taken to avoid crushing the urethra if the clamp is applied proximal to the ring.

PROXIMAL

Toward body ↑



DISTAL

Toward tip of scrotum

5.6 Surgical Procedures – Other

- a) In order to avoid interference with colostrum intake, surgical procedures must not be performed on the first day of life unless medically necessary.
- b) Surgical procedures must be performed by a trained, experienced person.
- c) Teat removal must be performed by trained personnel (Code Requirement p. 34). It must be performed using pain control and preferably at the same time as another painful procedure for which analgesia is used (e.g. disbudding). The use of either (or a combination of) an anesthetic and/or an analgesic for teat removal is acceptable.
- d) Udder hair can be removed by manual, electric or flame clipping with very low heat, provided that animals are restrained, that staff are trained in the technique, and that caution is taken to ensure animals are not harmed during the procedure.
- e) Dairy cattle must not be tail docked unless medically necessary (Code Requirement p.34). Consult a veterinarian.
- f) Spaying (females), which is not generally performed in dairy production, is prohibited.
- g) For major surgeries not listed in this section (e.g. C-section, displaced abomasum), consult your veterinarian prior to performing the procedure or have the vet perform the procedure. Anesthetic, analgesia and bleeding control are required.

5.7 Milking

- a) Animals must be handled quietly and calmly to and from and within the milking parlour.
- b) Necessary procedures that may cause stress or pain (e.g. therapeutic injections) should be avoided in the milking parlour.
- c) Efforts must be made to minimize the time cows wait in the parlour holding area.
- d) Animals that are sick, weak or lame must be milked in a hospital pen.
- e) Cows must be milked on a consistent schedule to provide the animals with a predictable routine. Lactating cows must not be left unmilked for longer than 15 hours except during dry off.
- f) Cows must be milked out completely at each milking.
- g) To prevent the occurrence and spread of mastitis, teats must be cleaned before milking and coated in a teat dip after milking. House infected cows separately and milk them last or separately from uninfected cows.
- h) Cows being treated for a disease must be appropriately identified and milked last or separately from untreated cows.
- i) Milking equipment must be sanitized according to industry standards.
- j) Corrective action must be taken to prevent and eliminate stray voltage.
- k) Equipment must be inspected by a qualified person a minimum of every 12 months (Code Requirement p. 12).

Recommendations and Guidance

It is recommended that the time spent away from the cow's home pen be kept below 90 minutes per milking.

5.8 Handling

- a) Animal handlers must be familiar with cattle behaviour and quiet handling techniques either through training, experience or mentorship (Code Requirement p. 31).
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- b) Animals must be handled with care and in a manner that imposes the minimum possible stress. When moving cattle, facility design and the surrounding environment must be considered. Handlers must move cattle at a slow walk and must refrain from using loud noises or hitting to move cattle. Plastic paddles and flags work well as moving aids.
- c) Electric cattle prods must only be used in extreme situations, such as when animal or human safety is at risk, and must never be used on the face, anus or reproductive organs of dairy cattle (Code Requirement p. 41).
- d) Electric prods must not be used on calves that can be moved manually (Code Requirement p. 41).
- e) All dairy operations must be equipped for the safe restraint and handling of animals (Code Requirement p. 14).
- f) When necessary for husbandry or health management procedures, restraint must be as brief as possible and must be performed using equipment that is designed and maintained to prevent pain or injury.
- g) Excessive tail twisting or jacking can cause tails to break, particularly in young animals, and must not be performed.
- h) Some breeds of herding dogs that work by nipping and biting can pose a serious welfare issue for cattle. If used, herding dogs must be properly trained and must respond to voice, hand or whistle commands.

Recommendations and Guidance

Animal handlers should be specifically trained in humane handling techniques, including the concepts of “field of vision”, “flight zone” and “point of balance.” Producers are encouraged to take a livestock handling course and obtain a copy of the American Meat Institute’s Good Management Practices for Animal Handling and Stunning. Producers can contact the Certification Body for information about these and other resources and courses on cattle handling.

Monitoring the number of slips and falls is a good indicator of whether handling is appropriate. Aim for less than 1% of animals falling (torso or head makes contact with the floor). See the American Meat Institute’s Good Management Practices for Animal Handling and Stunning.

5.9 Replacement Heifer Management

- a) Heifers must receive a ration that will maintain health, growth and vigor (Code Requirement p. 18).
 - b) Heifers must not be bred before they reach a minimum of 2/3 of mature body weight.
 - c) Producers must be familiar with the signs of approaching parturition and be ready to provide assistance if required.
 - d) Heifers, in particular, must be monitored carefully and must be bred to ensure calving ease either through the use of breeds of known calving ease or bulls with a proven record of calving ease.
 - e) Calving aids must only be used to assist a delivery and not to deliver a calf as quickly as possible.
 - f) When calving assistance is required, acceptable veterinary practices must be observed. In cases where calving cannot be facilitated through manipulation of the calf or through moderate traction, veterinary assistance should be sought immediately.
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5.10 Dry Cow Management

- a) Dry cows must receive a ration that will maintain their health and vigor (Code Requirement p. 18).
- b) Cows must not be re-bred for at least 6 weeks post-partum.

Recommendations and Guidance

Dry cows should be kept separate from the regular milking herd unless the feeding system allows for separation at feeding. Separation also allows for ease of management and monitoring of body condition.

5.11 Breeding Bull Management

- a) Restraining facilities built to handle bulls must be available when needed.

5.12 Cull Animal Management

- a) Cull animals must be cared for right up until shipping or euthanasia.
- b) Calves must not be transported until 7 days of age.
- c) Calves must have received adequate colostrum before being transported (Code Requirement p. 39; also see Section 2.3 – Calves).
- d) Calves must receive at least one full meal the day they are being shipped (See Section 2.3 – Calves).
- e) Cull cows still in production must be milked out prior to shipping (See Section 6.3 – Fitness of Cattle for Transport).
- f) Animals too sick or injured to be transported must be treated immediately or euthanized on site (See Section 7.0 – Euthanasia and Slaughter).
- g) If animals are culled, drug withdrawal times must be observed (Code Requirement p. 27).

Recommendations and Guidance

Where possible, producers are urged to ship bull calves directly to nearby SPCA Certified beef producers. Options can be discussed with the Certification Body.

5.13 Animal Identification

- a) All cattle must be identified using an approved ear tag as stipulated by applicable regulations (Code Requirement p. 33).
- b) Ear-tags (metal and plastic) and microchips are acceptable methods of identification.
- c) Ear notching and wattling are prohibited.
- d) If temporary identification is used (e.g. paints, dyes, wax markers), they must be designed as livestock markers and must be non-toxic.
- e) Branding, which is not generally conducted on dairy farms, is prohibited.

5.14 Equipment and Emergency Preparedness

- a) Equipment and facilities must be inspected at regular intervals and any defect or malfunction corrected.
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- b) Emergency back-up systems and plans must be maintained and tested, especially for ventilation, feeding and watering equipment.
 - Emergency back-up systems: Backup generators and any other equipment used in the event of a power failure.
 - Emergency back-up plans: Procedures to be followed in the event of a natural disaster, power or other mechanical failure to ensure that animals can be cared for, housed, fed and watered. Include protocols for moving animals from their existing housing to alternative temporary housing in the case of flood, fire, or other natural disaster.
- c) All fire prevention and detection devices and plans must be maintained, tested and up to date.
- d) Emergency provisions for suitable drinking water and feed must be available in case of natural disaster or power failure.
- e) Maintenance of waste storage facilities (includes mortality disposal) is essential to prevent groundwater, stream contamination and other such environmental disasters in the event of a natural disaster.

Recommendations and Guidance

Producers are urged to contact the Certification Body prior to purchasing new equipment if they are concerned about its compliance with the *SPCA Certified Standards for the Raising and Handling of Dairy Cattle*.

5.15 Nuisance Animal Control

- a) Management techniques must be used to control fly populations in indoor and outdoor settings. Fly paper and zap traps are acceptable.
 - b) Dairy cattle must be protected from predators on pasture, ideally by methods that do not cause death to the predator (e.g. use of guardian animals and/or electric fencing).
 - c) Any guardian animals (e.g. dogs, llamas, donkeys) used to protect the herd from predators must also be cared for in accordance with high standards of animal welfare. This includes, but is not limited to, access to feed and water, grooming for the purpose of maintaining health and hygiene (e.g. hoof/claw or hair trimming when necessary), parasite control and treatment of diseases/illnesses.
 - Note: The grooming requirement is meant to be for practical purposes only (i.e. to maintain good health) and is not meant to be for aesthetic purposes.
 - d) Humane methods of rodent control must be used. This includes devices or systems that minimize suffering and/or cause a quick death.
 - Quick-kill snap traps are preferred over rodenticides.
 - Rodenticides may only be used to control severe outbreaks. When used, rodenticides must only be applied using bait stations, which must be closely monitored to ensure prompt removal of dead rodents.
 - Methods of control that prolong suffering by causing starvation, hypothermia or excessive discomfort are unacceptable, as are those that endanger other animals.
 - The use of glue boards, electrocution, drowning, live freezing and ineffective traps for controlling rodent populations are strictly prohibited.
 - e) Methods of control for other nuisance animals (e.g. non-predatory birds like starlings and swallows) must also be humane. Traps/nets must be checked frequently. Prevention of entry to the barn is key.
-

6.0 TRANSPORT AND HANDLING

6.1 General

- a) Transporters/haulers must have a Standard Operating Procedure (SOP) and Emergency Protocol for transportation. It must be provided to the Validator upon request. At a minimum, the SOP and Emergency Protocol must outline how the requirements in Section 6.5 are met.
- b) Personnel involved in transport and handling of animals are expected to adhere to:
 - Provincial and federal animal transport regulations
 - The Health of Animals Regulations (Code requirement p. 41)
 - The Recommended Codes of Practice for the Care and Handling of Farm Animals – Transportation (2001)
 - The SPCA Certified Standards for the Raising and Handling of Dairy Cattle
 - The Transporter's Standard Operating Procedure and Emergency Protocol, as approved by the Certification Body
- c) Farm managers, staff and haulers must have access to and be familiar with each of the documents listed in part b) above.

6.2 Holding, Loading and Unloading

- a) Cattle must be allowed access to feed until 5 hours before loading. Feed must not be withdrawn before that time.
- b) Cattle must have access to water until they are loaded onto the transport vehicle.
- c) Animals must be collected and handled with care and in a manner that imposes the minimum possible stress. See Section 5.8 – Handling.
- d) When moving cattle, facility design and the surrounding environment, as well as the use of other aids must be considered.
- e) Precautions must be made to minimize noise levels from personnel or equipment during the loading and unloading process.
- f) All injuries and deaths occurring during loading and unloading must be recorded. A copy of this record must be kept on the farm and made available to the Validator.
- g) Maximum slope of loading/unloading ramps (as indicated in the *Recommended Code of Practice – Transportation*, 2001) is 25 degrees.
- h) Electric cattle prods must only be used in extreme situations, such as when animal or human safety is at risk, and must never be used on the face, anus or reproductive organs of dairy cattle (Code Requirement p. 41).
- i) Electric prods must not be used on calves that can be moved manually (Code Requirement p. 41).

6.3 Fitness of Cattle for Transport

- a) Every animal must be assessed before being transported (Code Requirement p. 38). Unfit animals must not be transported unless to a veterinarian for diagnosis or treatment. Such animals must be treated immediately or euthanized. See Section 7.0 – Euthanasia and Slaughter. Animals deemed unfit for transport include those that:
 - Score 2 or lower for BCS on a 1-5 scale (see Appendix B for body condition scoring)
 - Score 4 or 5 for lameness on a 1-5 scale (some exceptions apply; see Appendix C)
 - Are under 7 days of age
-

- Fall within any of the descriptions listed on the *Should this Animal be Loaded?* decision tree (see Appendix E)
- b) Animals in the last 10% of gestation must not be transported to a sale or to slaughter, due to the high likelihood that they could give birth on the journey. These animals may be transported for short durations between properties that are part of the same farm operation.
- c) Lactating animals must be milked out immediately before transport and again within 12 hours of leaving the farm if transferred to another facility under the same ownership.
- d) Dry off heavy lactating cows destined for slaughter prior to shipping, or ship directly to an abattoir if they cannot be dried off (see Appendix E).
- e) If an animal becomes unfit for transport during transit, it must be treated immediately, humanely slaughtered at the nearest possible location or euthanized immediately on site (See Section 7.0 – Euthanasia and Slaughter).

Recommendations and Guidance

It is recommended that animals be assessed for health and fitness (including body condition scoring and lameness) at staging points such as auction yards, ports and borders (provincial and national).

6.4 Hauler Qualifications

- a) Cattle must be transported by haulers/staff who have completed the cattle module of the Certified Livestock Transport (CLT) program, or who have completed another training program approved by the Certification Body. **A requirement for completion of the dairy cattle module of the CLT program will be phased in as it becomes available across Canada and a reasonable representative sample of certified transporters are available in the area.**

6.5 Transport Conditions

- a) Time from beginning of loading until slaughter must not exceed 24 hours when within the farmer's control.
 - b) Cattle must be transported within the limits of the loading densities described in the Code of Practice for the Care and Handling of Farm Animals – Transportation (2001).
 - c) Ensure that incompatible cattle are segregated (Code Requirement p. 41).
 - d) Measures must be taken to shelter cattle from unfavourable environmental conditions (i.e. excessive wind, rain, heat or cold) during transport and before slaughter. During hot or humid weather (see Appendix F) cattle must be transported at night, during the coolest part of the day, or at a 20% lower stock density.
 - e) If vehicles are required to remain stationary for substantial periods of time during hot weather, measures must be taken to ensure sufficient ventilation to avoid heat stress.
 - f) All injuries and deaths occurring during transport must be recorded. A copy of this record must be kept on the farm and made available to the Validator. Haulers must take corrective action to prevent identified causes of injury and/or death.
 - g) Electric prods are only permitted as per Section 6.2 h) and i).
-

Recommendations and Guidance

Cross gates (partitions) are recommended for separating mature bulls from other animals, for separating cattle of different sizes within the same vehicle and for creating smaller groups of animals. Maximum recommended group sizes are as follows:

- Adult cattle – 8 animals
- Calves – 15 animals

Cattle should only be transported in vehicles specifically designed for their transport in order to provide adequate care during the journey.

All efforts should be made to reduce or eliminate the need for sales yards, auctions and collecting stations. Cattle should be transported directly from farm to final destination (slaughterhouse or other farm).

During hot weather periods, efforts should be made to transport cattle at night or during the coolest part of the day, instead of during peak temperature periods. The use of actively ventilated transport vehicles and on-board equipment for monitoring temperature and humidity is strongly recommended. Parking the vehicle in a shaded area during rest stops will help control any abrupt rises in temperature during hot weather.

A temperature-humidity index is available in Appendix F.

6.6 Purchase and Sale of Animals

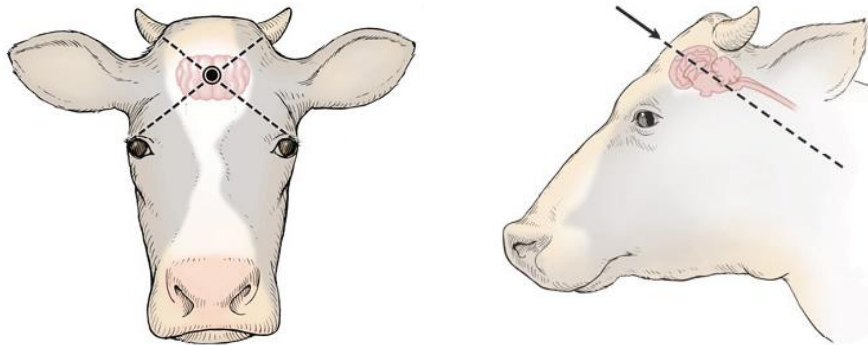
The program discourages the use of auctions/sale barns for purchasing and selling cattle.

- a) When the use of auctions/sale barns is unavoidable, the following documentation is required for each animal purchased (breeding animals exempt – see Section 6.6 b):
 - Signed affidavit from the seller confirming that cattle are raised under the SPCA Certified program
 - Farm of origin documentation
 - History including movement and transportation records, documenting previous owners/farms
- b) Cattle purchased for breeding purposes that are not certified in the program shall be managed to the SPCA Certified Standard for one month in order to be included under the farm's Certificate of Registration (as per the SPCA Certified Operations Manual).

7.0 EUTHANASIA AND SLAUGHTER

7.1 Euthanasia

- a) Cattle with untreatable conditions, not responding to treatment, or not fit for transport must be euthanized (Code Requirement p. 42).
- b) An acceptable method for euthanizing cattle must be used (Code Requirement p. 43). The method to euthanize cattle must be quick and cause the least possible pain and distress (Code Requirement p. 43). The Program requires this apply for both on-farm and during transport.
- c) Acceptable euthanasia methods for cattle are:
 - Free bullet (0.22 caliber for calves, 0.22 magnum or high-powered rifle for mature heifers, cows and bulls) – see siting, below. Must only be done by persons well versed in handling firearms and licensed to use them. Euthanasia by this method should be done outdoors to avoid bullets ricocheting off of other surfaces.
 - Penetrating captive bolt followed immediately by pithing, bleeding or cardiac puncture – see siting, below.
 - Non-penetrating captive bolt followed immediately by bleeding (not for adult cattle) – see siting, below.
 - Intravenous injection of barbiturates (or other suitable drugs) by a licensed veterinarian – some such drugs are strictly controlled and must be administered by a veterinarian.
- d) For cattle, the point of entry of the bullet or penetrating captive bolt should be at the intersection of two lines, each drawn from the rear corner (outside corner) of the eye to the base of the opposite horn (see diagram). When euthanasia is performed by gunshot, the firearm should be held within a few inches or a few feet of the intended target. Ricochet may be prevented if the barrel of the firearm is positioned perpendicular to the skull. According to the Humane Slaughter Association, the site of impact for calves is slightly lower than for adult cattle. Mature bulls may have a hard, thick frontal bone; therefore, a shotgun may be more effective than a penetrating captive bolt gun.



- e) Confirm death immediately and before moving or leaving the animal (Code Requirement p. 43).

7.2 Slaughter of Animals for Meat

The Certification Body will be phasing in a requirement that slaughter plants and farms that slaughter animals on site be assessed by a 3rd party auditor for adherence to the American Meat Institute's *Recommended Animal Handling Guidelines and Audit Guide*. Farms and plants that pass this audit will be certified for slaughter of animals.

APPENDIX A: HERD RECORDS

Herd records must illustrate:

- a) The Farm System Design Plan – a map of the farm illustrating all areas (indoor and outdoor), exits, emergency equipment and evacuation routes for workers.
- b) Herd Health Plan and the following related records:
 - Animal production and health information, including calf blood serum analyses
 - All vaccines, drugs and treatments used and purchased (receipts kept) – a record of drug serial numbers, withdrawal dates, dosages, expiry date on bottle, reason for use and location of administration. This includes homeopathic medicines.
 - Disease outbreaks (including cause, if known)
 - Treatment log with reasons, medication used, animal identification, withdrawal times
 - Mortalities (including cause, if known)
 - Euthanized and culled animals (and reasons)
 - Lab testing or other diagnostics
- c) Biosecurity Plan
- d) Breed and number of all animals
- e) Sources of all purchases and sales of animals – a complete audit trail from farm to final sale
- f) Year-end inventories of animals
- g) Record of all deaths and injuries occurring during loading and transport
- h) Condemnations and dead-on-arrival records from the processor
- i) Feed suppliers, feed ingredients and supplement records
- j) Water additives, if any
- k) Monthly ammonia levels assessed at cattle head height
- l) Standard Operating Procedure (SOP) and Emergency Protocol for transportation

Using the record keeping forms that are provided with this manual is optional. It is acceptable to use records from industry programs and/or any record keeping forms that have already been developed for the operation. Applicants that do not have a consistent record keeping system are encouraged to use and implement the Certification Program forms upon receiving them in the application package.

Upon obtaining certification, Members will be expected to retain all records between one Annual Assessment and the next (minimum one year). Proof of records/record keeping must be provided to the Validator.

APPENDIX B: BODY CONDITION SCORING GUIDE

Score	Appearance	Condition
1	Severe underconditioning (emaciated)	Spinous and transverse processes prominent, no fat cover, deep cavity around tail head, deep depression in loin.
2	Frame obvious (thin)	Spinous and transverse processes prominent but smooth, slight fat cover, shallow cavity around tail head with some fatty tissue lining.
3	Moderate frame and covering well balanced (good condition)	Spinous and transverse processes rounded, muscle development full, no cavity around tail head, slight depression in loin area.
4	Frame not visible (fat)	Spinous processes evident only as a line, fat cover considerable but firm, transverse processes cannot be felt, tail head rounded with fat, no depression in loin area.
5	Severe overconditioning (obese)	Spinous and transverse processes not detectable, fat cover dense and soft, tail head buried under thick layer of fatty tissue.

Aim for the following body condition score ranges:

Phase	Ideal BCS Range
Growing heifers	2.75 - 3.25
Heifers – calving	3.25 - 3.75
Cows – calving	3.25 - 3.75
Early lactation	2.50 - 3.25
Mid lactation	2.75 - 3.25
Late lactation	3.00 - 3.50
Dry off	3.25 - 3.75

Note: numbers represent averages.

APPENDIX C: LAMENESS SCORING GUIDE

Lameness Scoring Protocol for Dairy Cows

1. Visit the farm **during milking**, and observe the entire herd if possible, or the 'high production' group of lactating cows*.
2. Choose a point along the return alley outside of the milking parlour where each cow can be observed walking in a straight line on a flat, even, and dry surface. The observer should keep sufficient distance from the cows so as not to startle them.
3. Watch cows walk at their own pace as they exit the parlour. Assess lameness from the side to be able to see the back arch, head movement, length of the stride, and evenness of the steps.
4. If a large group of cows come out of the parlour at once and it is difficult to observe individual cows, try to create a narrow passageway using a gate or a rope to let one cow pass at a time. Alternatively, a second person could help slow down the traffic.
5. Tally the number of cows scored as 3, 4 or 5 and record the total number of cows that are in the group assessed. Determine the percentage of cows at each lameness score to calculate the prevalence of lameness.

*Note: Different farms will have different group structures. Some may have one pen, housing all lactating cows together, while others separate the higher producing cows from lower producing cows (to feed different rations) or the first lactation cows from the more mature cows. If it is not possible to score all cows in the herd, choose the 'high production' group, as they are generally at higher risk of lameness.

Creating a Good Lameness Scoring Environment

Creating an environment where a cow feels comfortable walking will optimize your scoring ability. Scoring cows during their familiar routine, such as returning from milking, minimizes stress on the cows and allows for the most accurate assessment. Cows may alter their gait if they are put in a new situation or see an unfamiliar person. Scoring can be done most accurately when cows walk at a consistent pace in a straight line.

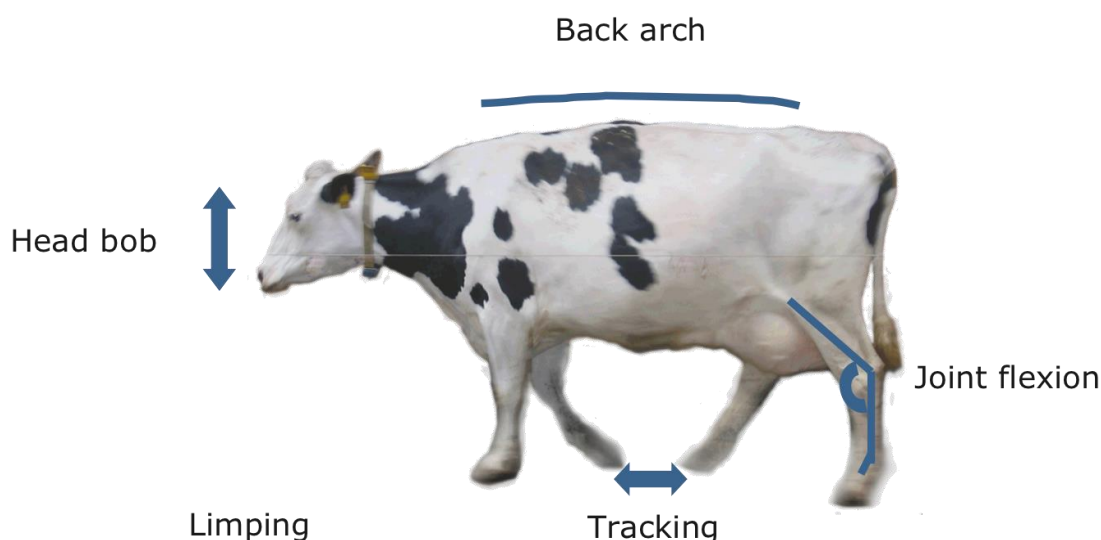
Interpreting Lameness Scores

- Score 1: Fit for transport.
- Score 2: Assess to determine course of action (e.g. medical treatment, cull). Fit for transport.
- Score 3: Requires medical treatment or send directly to slaughter/euthanize.
- Score 4: Requires medical treatment or send directly to slaughter/euthanize. Haul only a short distance for slaughter or for veterinary treatment.
- Score 5: If untreatable, euthanize animals or slaughter on-farm.

Score 3 may become worse during transport. Animals with a score of 4 or 5 are more likely to fall down and/or get trampled during transport. This may result in worsened lameness upon arrival at the final destination, or increased incidence of dead-on-arrivals.

Refer to the following two pages for behavioural signs of lameness and a scoring sheet.

Score	Description	Behavioural Signs
1	Not Lamé	Normal walking Smooth and fluid movement
2	Slight to Mild Lameness Imperfect movement but ability to walk not compromised	No limp Flat back Steady head carriage Smooth strides (tracking of front and back feet) Even steps Joints flex freely
3	Mild to Moderate Lameness Capable of movement but ability to walk is compromised Still able to keep up with a walking herd	Slight limp Arched back Steady head carriage Shortened strides Uneven steps Joints show signs of stiffness
4	Moderate to Severe Lameness Ability to walk is obviously diminished Unable to keep up with a walking herd	Obvious limp that is immediately identifiable Obviously arched back Head bob (jerky head movement up or down) Short and hesitant strides Uneven steps Stiff joints May stand with bent leg (avoids weight bearing)
5	Severe Lameness Ability to walk is severely restricted; must be vigorously encouraged to move	Inability to bear weight on one or more limbs Extremely arched back Obvious head bob Hesitant and deliberate strides Extremely uneven steps Obvious joint stiffness



Adapted from: Flower, F. C., & Weary, D. M. (2006). *Effect of hoof pathologies on subjective assessments of dairy cow gait*. Journal of Dairy Science, 89, 139-146.

SPCA Certified Lameness Scoring Form

Farm: _____ **Herd Size:** _____ **Breed:** _____

Score	Number (Tally) of Cows	Total
1		
2		
3		
4		
5		
Total number of cows observed (group size):		

Lameness Prevalence

Score →	1	2	3	4	5
Number of cows					
% of cows					

Adapted from: Flower, F. C., & Weary, D. M. (2006). *Effect of hoof pathologies on subjective assessments of dairy cow gait*. Journal of Dairy Science, 89, 139-146.

APPENDIX D: HOCK LESION SCORING GUIDE

The following scoring system can be used for assessing hock lesions on dairy cattle.

SCORE 0

No swelling.
No hair is missing or
some hair loss.

SCORE 1

No swelling or minor
swelling (< 1 cm).
Bald area on hock.

SCORE 2

Medium swelling
(1 – 1.25 cm) *and/or*
lesion on bald area.

SCORE 3

Major swelling
(> 2.5 cm). May have
bald area/lesion.

APPENDIX E: DECISION TREE - SHOULD THIS ANIMAL BE LOADED?

Updated 05/10

SHOULD THIS ANIMAL BE LOADED? Guidelines for Transporting Cattle, Sheep & Goats



**Do Not Load
Do Not Transport**



**Do Not Transport
to a Sale**



Delay Transportation and Reassess

- Exhaustion
- Calving/lambing/kidding
- Dehydration
- Weakness/unstable
- Acute mastitis
- Ketosis
- Fever:



cattle > 102.5°F
39.1°C

sheep/goats > 103.3°F
39.6°C

Euthanize

- **Non-ambulatory (see box below)**
- Fractures of limb or spine
- Arthritis in multiple joints
- Cancer eye (severe)
- Cancer/leukosis (extensive)
- Extremely thin
- Pneumonia (unresponsive with fever)
- Prolapsed uterus
- Water belly
- Nervous disorders, such as rabies must be reported to CFIA
- Hernia that impedes movement



Transport With Special Provisions Direct to Slaughter

As Soon As Possible

- Abscess
- Blind
- Frost bite
- Cancer eye (eye intact)
- Lameness Class 1, 2
- Left/right displaced abomasum (without weakness, toxicity)
- Lumpy jaw
- Penis injuries
- Pneumonia (without fever)
- Prolapsed vagina or rectum
- Animals that have given birth within 48 hours

Within 12 Hours

**Seek advise from your veterinarian
Advise inspector at the destination plant.**

- Bloat*
- Hardware with localized signs
- Intestinal accidents
- Recent injury*
- Urethral blockage (acute)*
- Broken tail or jaw
- Smoke inhalation

**Animals must travel in a small compartment, either individually or with one quiet animal.*

Animals with multiple conditions may not be fit to transport.

Non-ambulatory animals: Unable to stand without assistance, or unable to move without being dragged or carried (downers). **Do not load or transport.**

Lame animals:

- Animals should not be loaded if at risk of going down in transit.
- Animals that can't bear weight on all four legs may be in pain and are at risk of going down during transit. These animals are often euthanized at sales and plants.

Lactating animals: Dry off heavy lactating cows before shipping when possible or ship directly to an abattoir.

Emergency On-Farm Slaughter

If an animal is fit for human consumption but not fit for transport (i.e. injured but not sick) emergency on-farm slaughter may be an option. Please consult with your provincial government for more information on the availability of emergency on-farm slaughter in your province.

Guidelines for Dealing with Compromised Cattle, Sheep & Goats

Federal Transportation Regulations (2010)

Health of Animals Regulations www.inspection.gc.ca

DO

- Segregate animals of different species, or substantially different weights and ages, or if incompatible by nature.
- Provide proper ventilation, drainage and absorption of urine.
- Have sufficient headroom for animals to stand in a natural position.
- Spread sand in the vehicle or have vehicle fitted with safe footholds, in addition to appropriate bedding.
- Ensure that animals unloaded for feed, water and rest remain at least five hours and longer, if necessary, for all animals to receive food and water.
- Ensure that calves too young to exist on hay and grain are provided with suitable food and water at intervals of no more than 18 hours.*
- Ensure that animals segregated in trucks receive extra protection from cold and wind chill; supply ample bedding.
- Euthanize animals promptly when you identify conditions outlined in the "Should this Animal be Loaded?" chart.

*Note: The Recommended Code of Practice for the Care and Handling of Farm Animals - Transportation suggests no more than 12 hours between intervals for calves.

DO NOT

- Transport a sick or injured animal where undue suffering may result.
- Transport when the animal is liable to give birth during the journey, unless under the advice of a veterinarian for medical care.
- Continue to transport an animal that is injured, becomes ill, or is otherwise unfit to travel beyond the nearest place it can be treated.
- Use goads or prods on the face, anal, udder or genital area.
- Load or unload animals in a way that would cause injury or undue suffering.
- Crowd animals to such an extent as to cause injury or undue suffering.
- Transport livestock in trailers not designed for safe handling of that species or class of livestock.

Source: *Transporting Livestock by Truck* (CFIA)

Lameness Classes

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

Transport as soon as possible

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.*

Do Not Load or Transport*

Class 3

Requires assistance to rise, but can walk freely.

Class 4

Requires assistance to rise; reluctant to walk; halted movement.

Class 5

Unable to rise or remain standing.

*** Any animal, including Lameness Classes 3, 4 or 5 may be transported for veterinary treatment, on the advice of a veterinarian.**

**CFIA Livestock
Emergency
Transport Line
1-877-814-2342
(Ontario only)**

Special thanks to the Ontario Humane Transport Working Group for their leadership on this resource. Funding for this project was provided in part through Agriculture and Agri-Food Canada's Advancing Canadian Agriculture and Agri-Food Program and the Ontario Ministry of Agriculture, Food and Rural Affairs.



www.bcfacc.ca
(604) 287-3276



www.afac.ab.ca
(403) 932-8052



Farm Animal Council of Saskatchewan Inc.
www.facs.sk.ca
(306) 249-3227



www.mbfac.ca
(204) 632-9047



www.ofac.org
(519) 837-1326

APPENDIX G: MEASUREMENT CONVERSION TABLE

Multiply an imperial number by the conversion factor shown to get its equivalent in metric units.
Divide a metric number by the conversion factor shown to get its equivalent in imperial units.

Imperial Units	Approximate conversion factor	Metric Units
Length		
inch	25	millimetre (mm)
foot	30	centimetre (cm)
yard	0.9	metre (m)
mile	1.6	kilometre (km)
Area		
square inch	6.5	square centimetre (cm ²)
square foot	0.09	square metre (m ²)
square yard	0.836	square metre (m ²)
square mile	259	hectare (ha)
acre	0.4	hectare (ha)
Volume		
cubic inch	16	cubic centimetre (cm ³ , mL, cc)
cubic foot	28	cubic decimetre (dm ³)
cubic yard	0.57	cubic metre (m ³)
fluid ounce	28	millilitre (mL)
pint	0.57	litre (L)
quart	1.1	litre (L)
gallon (Imp.)	4.5	litre (L)
gallon (U.S.)	3.8	litre (L)
Weight		
ounce	28	gram (g)
pound	0.45	kilogram (kg)
short ton (2000 lb)	0.9	tonne (t)

APPENDIX H: REFERENCE MATERIAL

The following publications can be obtained from national commodity group and/or specialized provincial organizations. The *SPCA Certified Standards for the Raising and Handling of Dairy Cattle* were developed based on the information contained in these documents:

ASAE (1997). Lighting for Dairy Farms and the Poultry Industry

EP344.2. ASAE Standards. Pp. 636-639.

ASAE, St. Joseph, MI 49085-9659.

Benchmarking lameness, leg injuries, cow comfort and facilities in North American free stall dairies In preparation, 2012.

von Keyserlingk M.A.G., A. Barrientos, K. Ito, E. Galo, and D.M. Weary.

Canadian Quality Milk On-Farm Food Safety Program Reference Manual (2010)

Available from Dairy Farmers of Canada

Website: dairyfarmers.ca

Certified Livestock Transport Training Program

Email: info@livestocktransport.ca

Website: livestocktransport.ca

Code of Practice for the Care and Handling of Dairy Cattle (2009)

Available from Dairy Farmers of Canada

21 Florence Street

Ottawa, Ontario K2P 0W6

Telephone: (613) 236-9997

Fax (613) 236-0905

Website: dairygoodnesss.ca

Code of Practice for the Care and Handling of Dairy Cattle: Review of Scientific Research on Priority Issues (2009)

Available from the National Farm Animal Care Council

Email: nfacc@xplornet.com

Website: nfacc.ca/codes-of-practice

Effect of hoof pathologies on subjective assessments of dairy cow gait (2006)

Francis C. Flower and Daniel M. Weary

Journal of Dairy Science. Volume: 89, pages 139-146.

Dylan Biggs Livestock Handling Clinics

Humane handling clinics approved by the Canadian Agricultural Skills Service (CASS)

Website: cattle-handling.com

Health of Animals Act

Available through Canadian Food Inspection Agency

Website: inspection.gc.ca/english/anima/trans/transpoe.shtml

Improving Animal Welfare: A Practical Approach

Edited by Dr. Temple Grandin

Published by CAB International (2010)

Lameness, leg injuries, and lying times North American freestall farms (2011)

Barrientos, A.K., D.M. Weary, E. Galo and M.A.G. von Keyserlingk

ADSA/CSAS/ASAS Joint Annual Meeting

New Orleans, Louisiana, USA

Procedures for the Humane Euthanasia of Sick, Injured and/or Debilitated Livestock (2011)

J. K. Shearer, DVM, MS and Paul Nicoletti, DVM, MS

Iowa State University

College of Veterinary Medicine

Ames, IA 50011

jks@iastate.edu

Phone: 515-294-2836

Website: <http://vetmed.iastate.edu/HumaneEuthanasia>

Recommended Animal Handling Guidelines and Audit Guide

American Meat Institute

June 2010 Edition

Website: www.animalhandling.org

**Recommended Codes of Practice for the Care and Handling of Farm Animals –
Transportation (2001)**

Available from the National Farm Animal Care Council

Email: nfacc@xplornet.com

Website: nfacc.ca/codes-of-practice

Should this Animal be Loaded? Guidelines for Transporting Cattle, Sheep and Goats (2010)

Produced jointly by: Alberta Farm Animal Care Council, Farm Animal Council of Saskatchewan, Manitoba Farm Animal Council, Ontario Farm Animal Council (now called Farm & Food Care Ontario).

Available from Certified Livestock Transport or any of the above organizations

Website: www.livestocktransport.ca

What's the Score: Dairy Cow. Body Condition Scoring Guide.

Alberta Agriculture, Food and Rural Development

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1-800-292-5697

Website: <http://www1.agric.gov.ab.ca>