D: LIVESTOCK PRODUCTION (310 CLAUSE 6)

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6 "Livestock excludes apiculture which is covered in 7.1. Subclause 8.4 on Transport applies to the transportation of organic livestock."	
6.1.1 "Livestock can make an important contribution to an organic agricultural system by a) improving and maintaining the fertility of the soil; b) managing the flora through grazing; c) enhancing biodiversity; and d) facilitating complementary interactions on the operation."	6.1.1 The statements described in 6.1.1 emphasize the holistic approach of organic agriculture in which all parts of the farm are interconnected. These statements are not requirements.
6.1.2 "Organic livestock products shall be from livestock raised according to this standard."	6.1.2 For the most part, the livestock standards do not tell an operator exactly what needs to be done because there are many different ways to meet the standards. Not only are there many different types of livestock, but there are also different husbandry systems which can promote animal health and meet the behavioural needs of livestock in accordance with the basic organic principles of fairness and care. It is therefore important to understand the intent of the standard.
6.1.3 "Livestock production is a land-related activity."	6.1.3 An organic system recognizes the interdependence of soil, plants and animals. "Land-related" means that the production methods must have a connection with the land. If not, the operation does not meet the intent of the standard. For example, a chicken barn without outdoor runs is on land, but given that the production of chickens has no relationship to the land, this would not meet the intent of the standard.
"a) Herbivores shall have access to pasture during the grazing season and access to the open air at other times whenever weather conditions permit: 1) calculated on the basis of dry matter intake, the consumption of grazed forage by ruminants that have reached sexual maturity shall represent a minimum of 30% of the total forage intake;	6.1.3 a) Access to the outdoors is fundamental to organic livestock production and means that organic livestock cannot be confined to indoor facilities except in certain situations (as defined by the standard). In keeping with their natural behaviour, herbivores must be allowed to graze when there is forage available. The minimum requirements described under 6.1.3 a) are to ensure that when determining the size of the herd/flock, the farmer takes into consideration the area of pasture land and

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2) consumption of grazed forage shall rise above 30% during high forage growth periods;

3) a minimum of 0.13 ha (0.33 ac.) per animal unit shall be devoted to grazing. [One animal unit = one cow or one bull, or two calves each 102 to 227 kg (225 to 500 lb), or five calves, each less than 102 kg (225 lb), or four ewes and their lambs, or six does and their kids];"

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its ability to provide feed during the grazing season. The standard ensures producers actually meet the intent rather than just providing an open door or an outdoor area consisting of little more than bare ground.

3) Although 1/3 acre (0.133 ha) per animal unit is a minimum requirement, there are regions of Canada where a larger area will be needed for pasture to provide at least 30% of the total forage intake during the grazing period.

Pasture should supply the majority of dry matter intake and nutritional requirements for cattle and sheep during the grazing season even though the minimum is only 30% of the total forage to be consumed on pasture. It is expected that forage intake from grazing will be greater during times of high grass growth than in periods of slow grass growth.

Information about the grazing season in a particular region will be needed for the calculations in a)1 and a)2. The length of the grazing season may vary from year to year with changing climatic conditions, and may or may not be continuous. The calculation is relatively simple for livestock consuming a 100% forage-based diet but more complicated for dairy herds where rations are more complex.

Steps in calculation:

1. Determine "dry matter demand," by using expected Dry Matter Intake (DMI) from referenced tables or published data for different classes of animals, or use a percentage body weight value. For example, a lactating dairy cow of 1200 lbs (544 kg) will consume (on a daily basis) approximately 3% of body weight in dry matter intake or 36 lbs (16 kg).

2. Determine "dry matter fed" from hay, silage or other forages fed. For example, 5 lbs (2.27 kg) per day of hay = 4.5 lbs (2.04 kg) DM plus DMI from other sources (e.g., grain).

3. Subtract "dry matter fed" from "dry matter demand" to determine the amount of DM from pasture.

4. Calculate DM from pasture as a percentage of total DM from forages.

5. Compare values at different times during the grazing season.

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"b) Other livestock, including poultry, shall have access to the outdoors whenever weather conditions permit;"

"c) Winter-only production of poultry is restricted to operations that are able to comply with land-related requirements for the specific livestock type, regardless of the time of year (see 6.13.8);"

"d) Exceptions in 6.7.2 and 6.11 may apply."

6.1.4 "Livestock stocking rates shall correspond to local agri-climatic conditions and take into consideration feed production capacity, stock health, nutrient balance and environmental impact."

6.1.5 "Livestock management shall aim to utilize natural breeding methods, minimize stress, prevent disease, progressively eliminate the use of chemical allopathic veterinary drugs, including antibiotics, and maintain animal health and welfare."

6.1.6 "As a general principle, the operator shall demonstrate their commitment to animal welfare. When an animal welfare issue is identified, the operator shall develop a corrective action plan. The operator shall document demonstrated improvements in animal welfare practices and shall make available upon request any documents or assessments mandated by industry associations."

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6.1.3 b) Access to the outdoors means more than just an open door. The intent is that all livestock are able to venture outside. Whether or not outdoor access is appropriate in different weather conditions depends on the type of livestock and the potential for degradation of the pasture or range.

6.1.3 c) The restriction on winter production of poultry is intended to prevent the switching between non-organic and organic production according to the time of year to avoid the need to provide outdoor access. It is not intended to prevent the seasonal production of poultry (e.g., organic turkeys for the Christmas market on an organic farm that does not otherwise raise poultry).

6.1.4 The number of animals per hectare (acre) should be calculated to:

- Minimize the risk of manure polluting soil, surface water or groundwater;
- Prevent overgrazing of pastures or damage caused to the grass cover or soil structure by hoof action (soil poaching);
- Prevent the build-up of parasites.

Integrated management of livestock and crop production should allow for the spreading of manure without adverse effects. Evidence of land degradation or excess nutrient runoff could indicate that stocking rates are too high.

6.1.5 A high standard of animal welfare is essential in organic production in order to minimize stress and avoid disease or injury.

6.1.6 Increasingly, animal welfare issues are being addressed in the conventional sector and many organic farmers also participate in programs such as the Dairy Farmers of Canada proAction program or the Chicken Farmers of Canada Animal Care Program.

It would be redundant to duplicate welfare assessments in an organic inspection if other organizations have already visited the farm for this purpose. Instead there is an expectation that the organic farmer strives to maintain high

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6.2.1 "Livestock breeds, strains and types shall be

a) suitable for, and able to adapt to, site-specific conditions within the local environment and production system;

b) known for their absence of disease and health problems, specific to breeds or strains;

c) recognized for their vitality and resistance to prevalent diseases and parasites."

6.2.2 "Livestock breeders shall

a) use natural methods of reproduction. Artificial insemination is permitted, including the use of sexed semen if it is mechanically separated;

b) not use embryo transfer techniques or breeding techniques using genetic engineering or related technology;

c) not use reproductive hormones to trigger and synchronize estrus."

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welfare standards and take corrective actions, if needed, to improve conditions.

Identification of an issue is not limited to the observations of an inspector or industry assessor – it could be the farmer, farm employees, a vet or anyone observing the animals. When a problem is identified, any subsequent actions to improve the situation must be recorded and the records must be available for the organic inspector to review.

For information on animal welfare in the context of the standards, see the work of the Animal Welfare Task Force (posted on Organic Agriculture Centre of Canada's website).

6.2.1 The objective of organic livestock management is to eliminate the need for health interventions. It follows that hardier breeds are often more suited to organic production than those bred for high performance in confined livestock systems. Livestock bred to perform well in non-organic management systems (particularly those with controlled-environment housing) do not necessarily perform well under organic management or in alternative pasture-based systems. Assuming no animal welfare issues have been identified, certifying bodies should question the choice of breed when there is a high incidence of health problems requiring intervention, or when there are requests to allow an exception to a particular part of the standard.

6.2.2 Organic methods respect natural behaviours and reproductive cycles. If non-organic animals are introduced into an organic operation for breeding, the rules of 6.2.2 must be followed once the new animals are on the organic farm.

Artificial insemination should be performed by a person proficient in the procedure. If semen is collected for semen testing of breeding males, do so in a manner that minimizes stress and distress. Electro-ejaculation not acceptable.

Human manipulation using hormones or technologies, such as embryo transfer, are not allowed.

If there is a chance that the livestock could be cloned, the origin or lineage of an animal will need to be checked before being brought onto the organic farm to ensure it is not a product of cloning or a descendant of cloned individuals.

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6.2.3.1 "Livestock used for organic livestock products (e.g., eggs, milk, meat, etc.) shall

a) be born or hatched on organic production units;

b) be the offspring of organic parents;

c) be managed organically throughout their lifetime."

6.2.3.2 "Exceptions to 6.2.3.1 a), b), and c) apply to poultry:

a) poultry products shall be from poultry that has been under continuous organic management, beginning no later than the second day of life; and

b) no medication other than vaccines shall be used to treat fertilized eggs or day-old poultry."

6.2.3.3 "An exception to 6.2.3.1 a), b) and c) applies when herds and individual animals (used as new breeding stock), whether from within or

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Calving aids may be used to assist delivery when needed but not to produce a calf as quickly as possible.

6.2.3 The intention is that organic livestock products come from an organic production unit where all the animals (parents and offspring) are raised organically. When converting existing non-organic livestock operations to organic management, some exceptions to this rule are allowed. Animals that are the product of embryo transfer cannot be sold for slaughter, but can be used for breeding or dairy, subject to the transition requirements of 6.2.4 and 6.3.

6.2.3.1 Exceptions are allowed for poultry because, as of 2020, there are not yet enough established operations supplying organic chicks in the quantities required for commercial production. However, chicks and pullets must be raised organically if they are to become an organic layer flock. Birds that have been raised to the organic standard from the beginning of life will be better suited to organic management when they reach production age.

When purchasing day-old chicks, the operator is responsible to ensure the chicks have not been given any medications and have not been hatched from eggs treated with antibiotics. Operators will need to communicate with the hatchery or supplier to obtain written confirmation.

When given at the hatchery (i.e., before the start of organic management on day two), all types of vaccines, including those that are genetically engineered, are allowed, as are vaccines for Marek's disease and Newcastle disease that may contain antibiotics as a preservative at a concentration of less than 1%.

6.2.3.3 The exception is only applicable when a farm decides to convert to organic production or when individual non-organic animals are brought into an organic livestock production unit. Herds cannot be rotated in and out of organic production. Note that organic dairy farms cannot sell

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from outside the operation (according to 6.2.4), are converted to organic production:	calves to non-organic feeding operations and then buy the heifers back just before breeding.
a) animals used for milk production shall have been under continuous organic management for at least 12 months; and	a) When a dairy farm transitions to organic production, the dairy animals on the farm must be managed according to the standards for at least 12 months before their milk can be considered organic. This also applies to individual non-organic dairy animals that are introduced into an organic herd. It does not provide an exception for replacement animals raised on the farm; they should always be managed according to the standard.
b) animals used for meat shall have been under continuous organic management from the beginning of the last third of the dam's gestation period."	b) This clause makes it possible to transition a beef or sheep operation. The dams on the farm at the start of transition can never be sold or processed as organic meat animals. However, as long as these dams are managed organically from the last third of gestation, their offspring will be organic. This exception is not intended as a general rule to allow breeding animals to be managed non-organically or to be fed non-organic feed and then returned to organic production at the beginning of the last third of gestation.
6.2.4 "Animals purchased for breeding shall be organic. However:	Good records are needed to demonstrate when organic management of parent animals began.
a) if suitable organic breeding stock is not commercially available, non-organic, non-gestating breeder animals and non-organic breeding males may be brought onto an organic operation and integrated into the organic system. Meat from such animals shall be non-organic;	6.2.4 Commercial availability is not well-defined in a livestock context, but in the interests of animal welfare, it should include the notion of proximity. Before using non-organic breeder stock, a producer must have a written record of the efforts made to find organic breeder stock. For example, transporting organic heifers over several days from Quebec to Alberta would be stressful for the animals and would justify sourcing non-organic animals from within the province. From an animal welfare perspective, if transit time is more than 12 hours, producers should be allowed to purchase local non-organic stock.
b) if transferred outside the organic operation, livestock obtained from non-organic sources in accordance with 6.2.4 a) shall be considered non-organic, either for breeding or slaughter;	
c) when expanding a herd and increasing the land-base, breeding stock brought onto the operation may graze third-year transitional pasture until the end of the second trimester;	To increase a breeding herd, non-organic female animals can be purchased but only if they are not already in gestation or lactating. (Note that an exception is made in 6.2.4 e) in the case of a catastrophic event.) When on the organic farm, these females will be considered organic for breeding purposes only. If a non-organic animal that was acquired for breeding on an organic farm is sold, full disclosure of the origin of the animal must be provided to the buyer so that the animal doesn't end up being inadvertently processed for
d) non-organic animals brought into a milk production unit shall be non-lactating;	
e) in case of catastrophic events, such as a barn fire or disease leading to a need for herd	

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repopulation, non-organic breeding stock (excluding poultry) may be brought onto an organic operation before the last third of gestation if suitable organic animals are not commercially available."

6.2.5 "Livestock or livestock products removed from an organic operation and subsequently managed on a non-organic operation shall be considered non-organic."

6.3 Transition of livestock production units to organic production (except poultry covered by 6.13.1.c.1)

6.3.1 "If an entire dairy herd is under conversion to organic production, the operator shall provide:

a) in the first nine months of the 12-month transition period, a minimum of 80% feed, calculated in terms of dry matter intake, that is either organic or raised on land included in the organic system plan that is managed in accordance with clause 5 (Crop Production) of this standard; and

b) only organic feed during the final three months of the 12-month transition period."

6.3.2 "Transition of land intended for feed crops or pasture shall comply with 5.1."

6.3.3 "When an animal production unit, such as an entire herd or flock, is in transition to

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organic meat. In the case of a dairy cow transitioned on one organic farm and sold to another organic farm, an additional 12-month transition time is not needed provided that proof of the time under organic management accompanies the sale.

Males brought onto an organic farm for breeding purposes must be managed organically while on the farm.

In situations where the land base has to be increased to support herd expansion, 3rd-year transitional pasture can be used for new breeding stock. If they are bred, females can continue to graze the 3rd-year transitional pasture until the end of their second trimester. If they graze the 3rd-year pasture in their third trimester, their offspring will not be considered organic. Note also that the existing herd cannot graze the transitional pasture and maintain organic status.

6.2.5 Livestock cannot be moved in and out of organic production unless there are specified allowances for a transition period after treatment with a veterinary drug (e.g., a dairy cow treated with antibiotics for mastitis). See 6.6.10 for details. Once removed from an organic operation, an animal ceases to be organic. Sales receipts and other livestock records should allow for the tracking of animals, including their destination upon leaving an organic operation.

6.3.1 Producers in transition are encouraged to provide certified organic feed or transitional feed for the 12 months before the production of organic milk. However, for the first nine months of the transition year, non-organic sources of feed are allowed for up to 20% of the total, calculated on the basis of dry matter intake. Detailed records of feed sources, quantities and the dates when non-organic sources were fed will be necessary to verify the actual percentage of conventional feed used. This only applies when an entire dairy herd is being converted for the first time, and does not apply to replacement heifers or single animals that are brought onto the farm.

6.3.2 There must be 36 months without the use of prohibited materials before the harvest of the feed crop.

6.3.3 This clause makes it possible for all parts of a production unit in transition to reach organic status at the same

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organic production, the pasture and feed produced during the final 12 months of the land transition period may be considered organic when consumed by livestock on the same production unit. This feed and forage shall not be considered organic outside the production unit."

6.4 Livestock feed

6.4.1 "The operator shall provide an organic feed ration that is balanced to meet the nutritional requirements of the livestock."

6.4.2 "Livestock feed shall consist of substances that are necessary and essential for animal health, well-being and vitality, and that meet the physiological and behavioural needs of the species in question."

6.4.3 "Specific livestock rations shall take the following into account:"

a) "for young mammals, the need for natural milk, including colostrum, within the first day of life;"
b) "in dairy operations, calves, lambs and kids may be taken from their mothers at the age of

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time, instead of waiting until all forages are certified before starting the transition of the dairy or beef herd or sheep flock. Without this allowance, transition time would increase by 12 or more months depending on the date of the hay harvest. Subclause 6.3.3 does not apply to poultry operations. For example, feed harvested from fields in the 3rd year of transition can be considered organic when fed to the dairy cows on the same farm during their 12-month transition period. It is also still considered organic feed once the herd transition is completed. However, this feed cannot be used as organic on another farm. Also, 3rd-year transitional feed cannot be purchased from another farm and fed as organic.

This allowance does not make it possible to produce organic milk or meat from livestock before the land has organic status. Offspring of meat animals will only be considered organic if they were born after the land transition is complete. Accurate harvest records will be important to verify the status of both feed and livestock.

If new land is brought into the operation after the initial transition is complete, transitional feed from this land does not have organic status on the farm until it meets the 36-month requirement. Feed from buffer zones is not considered transitional feed – it is non-organic.

6.4.1 Feed supply is one of the limiting factors on the size of a livestock production unit. If organic feed cannot be sourced in sufficient quality and type to provide a balanced ration suitable for the type of livestock, the livestock cannot be considered organic. Livestock may be fed organic food waste (≥ 95% organic content) if it is part of a healthy, balanced diet. Food products containing 70-95% organic ingredients can only be fed according to the exception in 6.4.7.

6.4.2 As well as providing the necessary amounts of protein, energy, vitamins and minerals, the feed must be suited to the type of animal including their different behavioural needs at different stages of life. Examples are given in 6.4.3.

6.4.3 a) Feeding dairy calves at least 4 litres (1.06 gallons) of good quality colostrum within 12 hours of birth is recommended. The recommended amount for kids is 150 ml/kg (2.3 oz/lb) of body weight over the first 24 hours; for lambs, the recommended amount is 200 ml/kg (3.07 oz/lb) of body weight over the first 24 hours.

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24 hours, provided that they receive colostrum. If contagious diseases are present in the herd, removal can occur sooner provided that calves, lambs and kids receive colostrum;"	6.4.3 b) Although it cannot be considered natural, the standard allows offspring of dairy animals to be removed 24 hours after birth and after having received colostrum through suckling and supplemental feeding. When there is disease in the herd that can be spread via the mother's milk, such as caprine arthritis encephalitis (CAE) or Johnes' disease, there is the option to remove the newborn immediately to prevent nursing. In this case, farmers will need to provide the young with sufficient colostrum according to the recommended amounts.
c) " when removal of beef calves, lambs and kids from their mother is necessary to prevent the spread of a contagious disease, the use of non-organic milk or non-organic milk replacer is permitted as part of a veterinary-approved plan of disease eradication if organic alternatives are commercially unavailable. The veterinary-approved plan of eradication shall include a timeline and preventative measures such as testing milk, blood or manure, or pasteurizing milk. In order of preference, the following can be used (provided it is free of medication): organic milk (including pasteurized), organic milk replacer, non-organic milk , or non-organic milk replacer."	6.4.3 c) Calves are naturally motivated to consume large volumes of milk; it is important to provide sufficient quantity. The Canadian Code of Practice recommends offering a minimum total daily intake of 20% of body weight in whole milk until 28 days of age. This is equivalent to a minimum of 8 litres/day for Holstein calves or 6 litres/day for Jersey calves. Reconstituted organic milk free of medication is an acceptable alternative to fresh whole milk.
d) "calves shall be given fresh, whole, organic milk or reconstituted organic milk provided that it is free of medication until the age of three months;"	
e) "calves can be fed milk from an organic cow that received treatment with antibiotics if a withholding period of twice the label requirement or 14 days, whichever is longer, is applied;"	6.4.3 e) The 2020 Standard allows calves to fed milk from cows that had received antibiotics as long as the last treatment was at least 14 days before milking or double the withdrawal period on the label (whichever is longer). This clause was added to reduce the amount of milk being wasted when antibiotics have been required. Milk replacer can only be used in emergencies.
f) "lambs and kids shall be given fresh, whole, organic milk or reconstituted organic milk until the age of two months or a weight of 18 kg (39.7 lb);"	6.4.3 f) When bottle feeding, high-quality roughage (e.g., hay) should also be available free choice to promote rumen development and achieve optimal growth and health. Refer to growth curves for young animals to verify that their growth rate and condition is optimal.
g) "if they are not nursing, young animals shall be fed to meet their nutritional requirements and to achieve optimal growth and health by	6.4.3 g) Ruminants are naturally adapted to a diet based on roughage. A high proportion of grain or concentrate reduces the pH in the rumen which can lead to health problems. The

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using artificial teats to satisfy their motivation to suck;"

h) "dairy calves shall have access to solid food at all times;

NOTE: Refer to the *Code of Practice for the Care and Handling of Dairy Cattle* for recommendations on colostrum feeding and the quantity of milk to be fed to dairy calves."

i) "for ruminants, at least 60% of dry matter in daily rations shall consist of: hay; fodder that is fresh or dried; or ensiled forage, for example, fermented grass, legumes, and corn plants. An increased grain ration is permitted to ensure that nutritional requirements are met during uncommonly cold periods or when forage quality is compromised due to extraordinary weather events;"

j) "if ensiled forage is fed to ruminants, at least 15% of the total dry matter in daily rations shall consist of long-fibre forage, that is, greater than 10 cm (4 in.) stem length. When ensiled corn is fed, unless there is analysis to the contrary, it shall be considered 40% grain/60% forage. The proportion of grain in ensiled corn shall be included in the percentage of grains in the ration (see 6.4.3 i);"

k) "in the finishing phase, poultry shall be given grain;"

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only time increasing the grain ration can be justified is in extreme cases when extra energy is needed to prevent a serious loss of body condition.

6.4.3 h) The specific requirements ensure that the functioning of the rumen is not compromised. Long fibres are important for a healthy digestion. They stimulate rumen muscle contractions, which leads to more chewing (of the cud) and saliva production. The mixture of cud with saliva helps buffer the rumen allowing the beneficial micro-organisms to thrive. Feeding only short-fibre silage can lead to poor digestion or rumen acidosis. Although 15% is higher than commonly seen in non-organic dairy production, it is considered a be a very good way to prevent acidosis and related health problems.

6.4.3 j) Vegetable matter is required for pigs to:
· satisfy hunger, · fulfill their need to chew,
· allow for natural foraging behaviour, and
· provide access to roughage.
"Vegetable matter" must be organic and refers to fruit, vegetables, the associated crop waste, and forages (straw, hay, pasture) but not grain seed screenings. Green matter can be a natural source of vitamins, minerals and amino acids for poultry and pigs. For example, a grass/clover forage with chicory can contribute 70% of requirements for lysine and methionine for poultry and significantly contribute to the amino acid requirements of dry sows.

Green matter is also considered an important environmental enrichment aid with various potential health benefits. For example, provision of green matter can help decrease or prevent feather pecking.

6.4.3 k) In conventional production, from 2-3 weeks of age, feed is usually restricted for broiler breeds that have been genetically selected for high feed conversion rates. This practice reduces high body weights and their associated

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	welfare risks. However restricted feeding programs will result in chronic hunger which adversely affects welfare. This illustrates how these high productivity breeds are unsuitable for organic production systems. Many organic standards around the world require slow-growing poultry breeds. Bio Suisse defines these as breeds in which "The average daily weight gain may not exceed 27.5 g up until the 63rd day of age." The Soil Association defines slow growing breeds as ones in which the daily weight gain averaged over the life of the bird is no more than 35 g per day (these figures should be taken from published breed data), and the maximum daily weight gain measured on the farm is never more than: i) 60 g in the case of chickens; ii) 105 g in the case of male turkeys; or iii) 75 g in the case of female turkeys." Slow-growing breeds, such as the Sasso, tend to be hardy birds and better at foraging than the common breeds selected for rapid weight gain in intensive poultry operations.
l) "poultry and pigs shall be given vegetable matter other than grain;" m) "poultry shall be fed daily. A "skip-a-day" feeding regime for breeding birds is prohibited;" n) "rabbits shall be given forage, such as grass and hay, and have access to material that keeps teeth healthy, such as gnawing blocks, root vegetables and tree branches. Substances in gnawing blocks shall be listed in Table 5.2 of CAN/CGSB-32.311."	6.4.3 l) Rabbits are herbivores and their teeth grow continuously throughout their lifetime. The chewing of tough, fibrous plant material keeps their teeth properly worn down.
6.4.4 "The following feed, feed additives and supplements are prohibited: a) feed and feed additives, including amino acids and feed supplements, that contain substances not listed in Table 5.2 of CAN/CGSB-32.311;	
b) feed medications or veterinary drugs, including hormones and prophylactic antibiotics, to promote growth; c) approved feed supplements or additives used in amounts greater than those required for	6.4.4 b) These prohibitions ensure that livestock are fed as naturally as possible without the use of drugs to promote growth. Also, feeds cannot contain veterinary drugs, such as coccidiostats or antibiotics, used to prevent disease or promote growth.

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adequate nutrition and health maintenance for the species at its specific stage of life;	6.4.4 c) The Permitted Substances Lists (CAN/CGSB-32.311) describe the types of additives and supplements that are allowed and the conditions that apply to their use. Recognizing that the feed available for rations may not always provide the trace minerals and vitamins needed for good health and adequate nutrition, supplements are allowed. They should be of non-synthetic origin whenever possible. Probiotics, enzymes and microorganisms are allowed. In general, supplements of synthetic origin are only allowed when non-synthetic ones are unavailable. In the 2020 COS, the terms "synthetic" and "non-synthetic" were often replaced with more detailed descriptions of what is and what is not permitted. The intent of the standard remains the same but the new wording clarifies the sources of permitted substances on a case-by-case basis.
d) feeds that are chemically extracted or defatted with prohibited substances;	
e) feed that contains mammalian or avian slaughter by-products;	6.4.4 e) The prohibition of the by-products of mammalian or avian slaughter does not preclude the use of milk, milk products, eggs, or egg products as poultry feed. Fish products are allowed as supplements to provide needed amino acids or vitamins. Organic sources of fish products are preferred but other sources can be used provided that all the preservatives and other ingredients are listed in Table 5.2: Feed, feed additives and feed supplements.
f) feed that contains preservatives unless they are listed in Table 5.2 of CAN/CGSB-32.311;	
g) silage preservation products unless they are listed in Table 5.2 of CAN/CGSB-32.311;	6.4.4 g) Allowed preservatives are those derived from non-GE bacteria, fungi or food by-products (such as molasses or whey), as well as lactic, propionic and formic acid.
h) appetite enhancers or flavour enhancers, unless they are listed in Table 5.2 of CAN/CGSB-32.311;	
i) feed formulas that contain manure or other animal waste; and	
j) feed that contains colouring agents unless they are listed in Table 5.2 of CAN/CGSB-32.311."	
6.4.5 "Livestock of all ages shall have access to clean, fresh water on demand. Livestock water	

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sources shall be tested according to livestock drinking water quality guidelines and procedures outlined in the relevant Code of Practice (see 2.5) and quality assurance programs mandated by industry associations."

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6.4.5 Certification inspectors will need to determine if water is readily accessible for the numbers of animals housed. For example, according to the Canadian Codes of Practice for the Care and Handling of Farm Animals there should be: (i) 1 bell drinker per 120 broiler chickens, or 5-20 birds per nipple; (ii) 50-75 laying hens per round waterer, 6-10 per nipple; (iii) 1 bell drinker per 100 turkeys; (iv) one nipple for 1-15 hogs or 6 sows; and (v) 10% of cattle should be able to drink at one time.

The main water source used for livestock drinking water must be tested for potential water contaminants in the area where the farm or ranch is located. It is not necessary to test for every potential toxin at a cost of thousands of dollars. Identify the main water quality concerns for the livestock being raised and assess the risks. For example, farmers should test for arsenic in areas where arsenic is known to be in well water, if the well is the main source of water. Areas where there is industrial activity such as gas/oil wells might warrant testing for hydrocarbons. It is important to test for nitrates everywhere.

Blooms of blue-green algae (cyanobacteria) in stagnant water can be a problem in the summer and fall and could be the cause of unexplained livestock deaths.

If there is a recommended standardized test for livestock water in a given region or province, use that for an initial test. Check the drinking water requirements in the Code of Practice or quality assurance program for the specific type of livestock. *Livestock Water Quality – A field guide for cattle, horses, poultry & swine* (published by AAFC and the University of Saskatchewan) provides information about recommended upper safe levels. According to *Livestock Water Quality*, "In most jurisdictions, it is generally recommended that drinking water for livestock should contain less than 100 coliforms/ 100 mL… Dugouts in rural areas that are not contaminated usually have *E. coli* counts of 20 to 100 per 100 mL, with wildlife being the predominant source. With direct watering of cattle, these counts may increase to greater than 10,000 counts per 100 mL for extreme cases."

Testing for bacterial contamination (total coliforms and *E. coli*) on a regular basis is important because of the potential

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6.4.6 "Force feeding of ducks and geese is prohibited."

6.4.7 "By exception, non-organic feed is permitted under the following circumstances:"

a) "If organic feed is unobtainable as the result of a catastrophic event with a direct impact on the production unit (for example, fire, flood, or extraordinary weather conditions), non-organic feed may be used for a maximum of ten consecutive days (or up to 30% non-organic feed for up to 30 consecutive days), to ensure a balanced livestock ration. Non-organic feed from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic feed;"

b) "Breeding herds may be given non-organic forage in the event of a regional forage shortage documented by the operator and confirmed by a regional authority, when possible, provided that the animals are segregated, visually distinguishable (for example, have ear tags and age verification records) and record keeping is maintained. For breeding herds, forage from land in transition to organic production and free of prohibited substances shall be used in preference to non-organic forage. Use of genetically engineered forage crops is prohibited at all times. In all other respects, breeding herds whose offspring is intended for organic products shall be under organic management at all times. The breeding herd shall be re-transitioned when an organic forage supply becomes available. Subclause 6.2.3 applies to any offspring. The organic status of other livestock on the operation is not affected."

c) "In the event of a forage shortage documented by the operator and confirmed by a regional authority, when possible, and if the

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for contaminated water to introduce pathogens into the food chain.

6.4.6 Force-feeding ducks and geese by inserting a tube into the throat to enlarge the liver (to produce *foie gras*) is not compatible with the principles of organic production. It is considered cruel and stressful for the birds, negatively affecting liver function and potentially causing injuries.

6.4.7 The following is an excerpt from "Feed for livestock: Pandemic and drought on the agenda of the review of the Canadian Organic Standards" by the Organic Federation of Canada. Read more at organicfederation.ca/2020-review-canadian-organic-standards-highlights.

Organic livestock eat organic feed and forage. But what happens when, due to drought, there is no organic silage available? Or, what happens after the nightmare scenario when a barn burns down and the winter's worth of feed and hay is lost in the flames? And, what happens when a pandemic interrupts international trade leaving farmers and feed suppliers unsure of when the next imports will arrive?

When developing the Canadian Organic Standard, there is both a need for compassion for the farmers facing disastrous conditions, and a need to maintain organic integrity.

The 2015 COS contained a certain level of flexibility in terms of the use of non-organic feed and forage for exceptional circumstances. Non-organic feed could be used for a maximum of 10 days after a catastrophe (e.g., fire or flood) that destroys or makes the feed supply unavailable, according to 6.4.7 a). This enables a farmer to use whatever non-GE feed is available in a short-term emergency situation to maintain the health of animals without losing organic status.

Generally, a commercial or logistical challenge, such as feed shipments being held up at the border, would not be considered a catastrophe because these can be avoided with better advance planning. A pandemic, however, is a different story and raises new questions.

In the spring of 2020, the global distribution system was severely disrupted by COVID-19; organic farmers and inspectors questioned whether this was considered a catastrophe under 6.4.7 a). The use of non-organic feed in the 2015 COS was restricted to 10 days because that was considered

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quantities of feeds allowed in 6.4.7 b) are insufficient, non-organic forage may comprise up to 25% of the forage ration for the entire ruminant herd with the following in order of priority preference:

1) non-organic forage from land in transition;

2) non-organic forage grown without the use of prohibited substances;

3) non-organic forage grown without the use of prohibited substances for at least 60 days prior to harvest;

4) non-organic forage provided it is not a genetically engineered crop."

d) "The operator shall design a contingency plan to address future forage shortages which may include strategies such as growing more climate-adapted varieties; improving grazing practices; stockpiling a supply of forage; identifying alternative supply chains; varying herd size; and improving the resilience on-farm forage production.

Note: For the exception in 6.4.7 a), the certification body should be notified as soon as possible after non-organic feed or forage is used. For the exception in 6.4.7 b) and c), the certification body should be notified before non-organic feed or forage is used."

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enough time to find a replacement supply of organic feed. While 10 days may be appropriate after a barn fire, it doesn't apply after a major disruption in the global supply chain.

Given that so many products were unavailable in the spring of 2020, some farmers found that it took more than 10 days to find everything they needed for balanced organic feed rations. On top of that, the whole supply chain was unstable and some farmers were afraid of recurring shortages of feed.

In response to requests from farmers, the 2020 COS now allows up to 30% non-organic feed for up to 30 consecutive days after a catastrophe in case farmers can't obtain all the feedstuffs needed for a complete feed ration within 10 days. For 6.4.7 a), the operator does not need to get specific permission from the certifier (but should notify the certifier about the change in the Organic Plan as soon as possible).

This was only one of several changes to Clause 6.4.7. When the COS review began, many farmers and inspectors questioned 6.4.7, which allows permitted non-organic forage to be fed to breeding stock (i.e., not organic animals destined for slaughter) during a regional forage shortage.

The clause 6.4.7 b) raised more questions. How large an area needs to be facing a shortage for it to be called a regional shortage? What authority needs to define a regional forage shortage? What happens to organic meat animals during a drought: do they all need to lose their organic status if there is no organic hay in the region?

After many long, thought-provoking discussions, the Livestock Working Group and CGSB Technical Committee on Organic Agriculture proposed several changes to 6.4.7 b) and added 6.4.7 c) and d).

In terms of regional forage shortages, the requirements were both clarified and relaxed. The 2020 COS allows for non-organic forage to make up to 25% of the forage for the entire ruminant herd, including animals destined for slaughter if the operator meets certain the conditions (see 6.4.7 c) and d)). The operator must document the forage shortage. Ideally, the farmer should seek out a second opinion from a competent authority to confirm the shortage. The appropriate authority can include a crop insurance organization, a provincial forage specialist, or a conservation authority. Unlike the catastrophic situation in 6.4.7 a), for the forage

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	shortages in 6.4.7 b), the operator must get permission from the certifier before feeding non-organic forage. The order of preference of forage sources is outlined in 6.4.7 c). Drought, flooding and other weather irregularities are becoming more common due to global climate change. To avoid having farmers and operators using non-organic forage year after year, operators must develop a plan as to how they will try to avoid forage shortages in the future. Examples of options are outlined in 6.4.7 d.
6.5 Transport and handling	
6.5.1 "Livestock shall be managed responsibly, with care and consideration. Stress, injury and suffering shall be minimized in all livestock handling practices, including transport and slaughter."	6.5.1 The *Code of Practice for the Care and Handling of Farm Animals: Transportation* (2001) is recommended as a reference. For poultry, the following documents provide helpful guidance. • *Code of Practice for the Care and Handling of Hatching Eggs, Breeders, Chickens & Turkeys*, (2016) Section 7 Transportation. • *Code of Practice for the Care and Handling of Pullets and Laying Hens*, (2017) Section 6 Handling & Transportation These documents are currently managed by the National Farm Animal Care Council. Producers are advised to study the recommendations of Temple Grandin to learn about handling facilities and methods which are the least stressful for livestock and handler. Consider both the design and the methods used. For example, pens, races, crates and shackles need to be in good condition so as not to cause injury. Birds must be hung on a shackle by both legs.
6.5.2 "Stocking density within transport vehicles shall conform to recommendations in the *Code of Practice for the Care and Handling of Farm Animals: Transportation* (see 2.4). The use of electrical stimulation or allopathic tranquilizers is prohibited."	6.5.2 Although specific stocking densities are just recommendations in the Code of Practice, they are minimum requirements for organic operations (as indicated by the term "shall conform"). Sufficient floor space is required to allow for adequate ventilation and a reasonable level of comfort, as well as enough space for the animal to be able to assume a natural position without coming into contact with the roof. Density in poultry crates must permit all birds to rest on the floor at same time if evenly distributed and to move their heads freely when sitting.

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6.5.3 "While in transit and before slaughter, animals shall have shelter against inclement weather, such as wind, rain and excessive heat or cold."

6.5.4 "If possible, animals shall be transported directly from the operation to their final destination."

6.5.5 "The duration of transportation shall be as short as possible. If animals are in transit for more than 5 hours, recommendations regarding maximum transit times, minimum feed and water requirements, and rest times, as provided in the *Code of Practice for the Care and Handling of Farm Animals: Transportation*, shall apply."

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Maximum cold weather densities (densities are lower in the summer): Chickens-63 kg/m^2 (139 lbs/10ft^2); Turkeys-98 kg/m^2 (216 lbs/10 ft^2). Maximum group size for day-old chicks is 100 chicks with 21 cm^2 (3.26 in^2) floor space per chick.

Density charts in Appendix 2 of the Transportation Code allow determinations to be made for each livestock type. For example: a 544-kg (1200-lb) beef animal requires a minimum area per animal of 1.3 m^2 (14 ft^2) with a maximum loading density of 420 kg/m^2 (86 lb/ft^2).

Hog transport density for 113-kg (250-lb) pigs is 278 kg/m^2 (57 lbs/ft^2) and minimum area of 0.42 m^2 (4.5 ft^2) per pig.

6.5.3 Inspection should verify the modes of transportation and determine if they are suitable for the type and number of livestock being moved, while also taking into consideration the time of year.

6.5.4 The standards do not prohibit auctions or the use of sale yards, but their use is discouraged for animal welfare reasons, even for cull animals.

6.5.5 The requirement is that transportation time be as short as possible. This means, for example, that livestock being sent to slaughter must be sent to the closest facility approved for handling organic livestock and inspected for the intended market (provincial or federal).

Short haul transport is considered less than 4 hours; anything over 6 hours is long haul. Given the size of the country it is possible that even "as short as possible" will be several hours. If organic livestock have to be transported for more than 5 hours, there are maximum times for travel which, once reached, require that the animals be unloaded and given feed, water and 5 hours of rest time. According to the Health of Animal regulations, maximum travel times are as follows:

- Market hogs: 36 hours; Sheep, goats and cattle: 48 hours;
- Lactating dairy cows: 12 hours; Unweaned calves: 18 hours;
- Poultry: 36 hours.

Although these time limits are referenced by the standard, it does not mean that long distance transport is encouraged or that the first statement of 6.5.5 can be ignored. For red meat animals, the duration of transportation ideally should be less than 8 hours. Transportation longer than 8 hours should

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6.5.6 "Fitness for transport shall be assessed before loading. Sick or unfit animals shall not be transported, for example, those that are injured, lame, emaciated, in late gestation or heavily lactating."

6.5.7 "If livestock is unfit for transport and euthanasia is necessary, it shall be performed by competent personnel with appropriate equipment. The method used shall be quick and cause the least possible pain and distress.

NOTE: In Canada, see also the Health of Animals Regulations under the Health of Animals Act (Canadian Food Inspection Agency). For guidance, refer to the transportation requirements in the Code of Practice for each animal type (see 2.4)."

6.6 Livestock health care

6.6.1. "The operator shall establish and maintain preventative livestock health care practices, including:

a) the choice of appropriate breeds or strains of livestock, as specified in 6.2.1;

b) a feed ration sufficient to meet the nutritional requirements of the livestock, including vitamins, minerals, protein, fatty acids, energy sources, and fibre;

c) housing, pasture conditions, space allowance and sanitation practices that minimize crowding and the occurrence and spread of disease and parasites;

d) conditions appropriate to the species that allow for exercise, freedom of movement, and minimal stress;

e) prompt treatment for animals with detectable disease, lesions, lameness, injury or other physical ailments;

f) vaccines, in accordance with this standard and Table 5.3 of CAN/CGSB-32.311, if it has been documented that the targeted diseases are

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include sufficient bedding and feed. Water must be provided at the end of the journey. Only approved haulers should be used.

6.5.7 Manually applied blunt trauma to the head is not an appropriate slaughter method for cattle. Penetrating or non-penetrating captive bolt and gunshot are methods which can be used by non-veterinarians.

Lethal injection by a licensed veterinarian is recommended for emergency euthanasia. For poultry, acceptable methods include cervical dislocation (for smaller birds) and a quick firm blow to the head after proper restraint of the bird (for larger birds). Euthanasia methods for each type of animals can be found in the specific code of practice.

6.6.1 This outlines the combination of management practices that are necessary to prevent disease, develop a strong immune system, and promote wellness. A balanced diet, adequate housing, gentle handling and careful observation all contribute to good health.

If there are health problems, it is up to the producer to look at all aspects of the operation to determine the contributing factors and develop a plan to prevent and/or solve the problems. A certifying body should ensure that producers have reviewed the operation in its entirety, and that the operators consult with a licensed veterinarian when there are recurrent health problems.

Check livestock regularly, particularly for lameness and foot ailments which are often associated with inadequate housing, pen or pasture conditions. Lameness in more than 10% of a herd (or flock), for example, is an indicator of poor welfare standards and requires corrective action on the part of the producer. Producers should be aware of the possible risk factors and provide adequate foot care for all animals. For dairy cattle, this would include regular feet trimming at least twice per year.

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communicable to livestock on the production unit and/or operation and cannot be combated by other means."

6.6.2 "The operator shall not administer:

a) veterinary drugs, in the absence of illness, other than vaccines. Anaesthetics and analgesics are permitted, subject to the requirements for physical alterations in 6.6.4;

b) synthetic substances to stimulate or retard growth or production, including hormones for growth promotion;

c) synthetic parasiticides, except by way of an exception provided in 6.6.11;

d) antibiotics to meat animals or to birds for meat or egg production;

e) chemical allopathic veterinary drugs for preventative treatments, for example, pharmaceuticals, antibiotics, hormones and steroids."

6.6.3 "Hormonal treatment shall only be used for therapeutic reasons and under veterinary supervision. The meat from treated animals shall not be organic unless the treatment is listed in Table 5.3 of CAN/CGSB-32.311."

6.6.4 "Physical alterations are prohibited, unless they are essential for animal health, welfare or hygiene, for identification or for safety reasons."

a) "The following physical alterations are permitted; restrictions in 6.6.4 c) apply:

1) castration of piglets, lambs, kids and calves;

2) tail docking of lambs;

3) branding and ear tagging; and

4) debudding/disbudding."

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6.6.1 f) Vaccines grown on GE substrate may be used if no alternative is commercially available. Day-old birds and fertilized eggs can be given any type of vaccine. GE vaccines that are products of genetic engineering, as defined in Clause 3 of 32.310, cannot be used on birds older than one day if non-GE alternatives are commercially available. This exception reflects the fact that organic health care relies on preventing illness, and vaccines are an important preventative tool.

6.6.2 The only veterinary drugs other than vaccines that can be used in the absence of illness are those used to reduce pain and stress when dehorning, castrating or carrying out other allowed physical alterations as outlined in 6.6.4 c).

Veterinary drugs in feed, whether for disease prevention or to promote growth, are prohibited.

If a meat animal is treated with an antibiotic, it loses its organic status permanently. However, that animal may remain in the herd, provided it is permanently marked. Eggs and meat from laying poultry that have been treated with antibiotics are considered non-organic.

6.6.3 Oxytocin is the only hormone that can be used without affecting the organic status of an animal sold for meat. It can only be used to treat post-parturition conditions such as retained placenta and failure to let down milk. Although there is no withdrawal period on the Oxytocin label, the organic standard requires a 14-day withdrawal period.

6.6.4 Physical alternations are not to be carried out as a matter of course even if the practice has been considered routine in the past. Whenever possible, alternatives should be considered.

6.6.4 a) 4) Debudding or disbudding is the first option to avoid horns. Dehorning is considered an option of last resort and must meet the requirements of 6.6.4 c).

For dairy cattle, pain control must be used when disbudding (which is allowed up to 3 weeks of age).

For beef cattle, disbud calves as early as practically possible while horn development is still at the horn bud stage. For

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b) "If they are the only remaining option, the following physical alterations are permitted; restrictions in 6.6.4c) apply:

1) minimal beak trimming or treatment to remove sharp hooks;

2) trimming of needle teeth in piglets;

3) tail docking of pigs and cattle; and

4) dehorning."

c) "Restrictions on physical alterations:

1) Physical alterations shall be carried out in a manner that minimizes pain, stress and suffering;

2) Regardless of age or method, consideration shall be given to the use of anaesthetics, sedatives and non-steroid anti-inflammatory analgesics, such as lidocaine, xylazine, and ketoprofen;

3) For castration, tail docking, dehorning, debudding/disbudding and branding, operators shall consult the applicable Code of Practice (see 2.4) and follow the requirements for age

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older calves (after horn bud attachment), use pain control to mitigate pain associated with dehorning. Use pain control when castrating bulls more than 6 months of age.

6.6.4 b) With large flocks of commercial poultry breeds, beak trimming is often considered necessary to reduce damage caused by feather pecking or outbreaks of cannibalism. To avoid stress, the procedure needs to be carried out at an early age (i.e., before problems arise). Trimming does not address the cause of the problem. To be compliant with the standard, the operator must demonstrate other measures taken to control this problematic behavior, such as encouraging use of the outdoor range.

Use of peepers/binders to prevent or control cannibalism is prohibited if pins are used because this is an unnecessary physical alteration. Without pins, they would still be considered an animal welfare issue.

Trimming of needle teeth in pigs is not considered absolutely necessary and should never be carried out as a matter of course. Litters need to be monitored carefully; there are more likely to be problems with large litters where competition is more intense. If needle teeth are causing injury, a grinder can be used to blunt the tips.

Although tail docking of pigs is not specifically prohibited, it is not considered a necessary practice. Tail biting is related to welfare deficiencies such as overcrowded pens without bedding. It can be prevented by providing an appropriate and comfortable environment that allows for natural behaviours. An appropriate setting allows nosing, chewing and rooting in straw, for example, rather than having the pigs redirect this behaviour towards companions in an aggressive manner.

6.6.4 c) If alterations are necessary, use the methods that cause the least pain and stress. Pain can also be reduced by using local anesthetics, non-steroid analgesics (painkillers) and sedatives.

The Animal Welfare Task Force fact sheets provide guidance on best practices. These are posted on the Organic Agriculture Centre of Canada website.

Removal of the horn buds of calves with caustic paste (lime is prohibited), analgesics and sedatives is less traumatic than

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restrictions and methods and the use of pain control medications;

4) Beak trimming of birds, tail docking of pigs and trimming of needle teeth in piglets are permitted when they are necessary to control problem behaviour that has a negative impact on the welfare of other livestock. Operators shall document the other measures taken to control or eliminate problem behaviour;

5) Tail docking of cattle is permitted only when necessary for veterinary treatment of injured animals;

6) Castration of piglets shall take place in the first two weeks of life. Castration of cull boars is prohibited; and

7) Spaying of female beef cattle is prohibited."

6.6.5 "Biological, cultural, and physical treatments and practices outlined in Table 5.3 of CAN/CGSB-32.311 are permitted, if preventative practices and vaccines are inadequate to prevent sickness or injury and treatment is required."

6.6.6 "Medical treatment shall not be withheld from sick or injured livestock to preserve their organic status. If methods acceptable to organic production fail, all appropriate medications shall be used to restore livestock to health."

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hot-iron dehorning with an anaesthetic (lidocaine). Adult cattle should not undergo dehorning procedures.

Certain traditional used methods are no longer considered acceptable without pain medication. The latest revisions of the Codes of Practice include requirements for the use of pain control. Anything required by the Code is a requirement for organic operations. Check with the latest Codes.

Dairy cattle: pain control must be used when dehorning or disbudding (up to 3 weeks of age).

Beef cattle: disbud calves as early as practically possible while horn development is still at the horn bud stage. For older calves (after horn bud attachment), use pain control to mitigate pain associated with dehorning. Use pain control when castrating bulls over 9 months of age. Pain control is needed for castrating bull calves over 6 months of age.

Pigs: castration or tail docking performed at any age must be done with analgesics to help control post-procedure pain. Immuno-castration products, which use the pig's own immune system to control substances that cause boar taint, are not permitted.

Sheep: castration using rubber rings is allowed for lambs from 24 hours to 10 days of age, and up to 6 weeks of age in a pasture lambing system. Surgical castration is allowed for lambs from 24 hours to 4 weeks of age. The Burdizzo is allowed for lambs up to 6 weeks of age. If castrated at a later date, anesthesia and analgesia are required. Tail docking must not be done using rubber rings for lambs after 6 weeks of age.

Goats: castration should be done before kids are 7 days old (2003 Code of Practice).

6.6.5 Even with preventive measures in place, it is probable that one or more animals will need treatment for disease or injury. As the first course of action, operators are encouraged to use treatments that do not require the use of antibiotics or other veterinary drugs. Permitted treatments include homeopathy, the use of Ayurvedic and herbal products, acupuncture, provision of trace elements or vitamins, and the use of probiotics. Early intervention is essential to the success of such treatments.

6.6.6 If the animal is not responding to alternative treatments such as those mentioned above, then appropriate antibiotic

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6.6.7 "If the presence of injured or diseased livestock presents a health risk to individual animals or birds, they shall be separated from the herd or flock, and/or euthanized, if necessary (see 6.6.13)."

6.6.8 "Shipping diseased livestock to slaughter is prohibited, if the end product is intended for human consumption."

6.6.9 "Products from sick animals or those undergoing treatment with restricted substances shall not be organic or fed to organic livestock."

6.6.10 "The use of veterinary medicinal substances shall comply with the following:"

a) "If no alternative treatments or management practices exist, veterinary biologics, including vaccines, parasiticides or the therapeutic use of medications may be administered, provided that such medications are permitted by this standard and Table 5.3 of CAN/CGSB-32.311 or are required by law."

b) "Phytotherapeutic medicines, that is, botanical compounds such as atropine, butorphanol and other medicines from herbaceous plants, excluding antibiotics; and homeopathic or similar products, shall be used in preference to chemical, allopathic veterinary drugs or antibiotics, provided that they are effective for the

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or other veterinary drugs must be given to prevent further pain and suffering, even if it means the animal can no longer be considered organic.

6.6.7 Monitor animals regularly for health. Sick animals or those undergoing treatment do not have to be separated from other livestock unless there is a risk of (i) the disease being spread or (ii) injury to the affected animal if the animal is kept with the flock or herd. In situations where separation causes further distress, visual and auditory contact should be maintained with other animals.

6.6.9 Meat or milk from a sick animal should not be given to other animals. However, there is an allowance in 6.4.3 d) that allows calves to drink milk from cows that received antibiotics as long as the last treatment was at least 14 days before milking or double the withdrawal period on the label (whichever is longer).

6.6.10 Any livestock treated with a veterinary drug must be clearly identified. Record all types of treatments, including treatment with homeopathic or natural remedies, including:
· The details of all treatments, such as their duration and the trade names of substances used;
· Tracking of treated animal/flock/colony through all stages of production, transportation, slaughter and processing; and
· The disposal methods of milk, waste or other products from treated livestock.

6.6.10 a) Vaccines are allowed for a known disease risk.

6.6.10 b) The standards encourage the use of alternative treatments (e.g., homeopathy and herbal treatments) over regular veterinary drugs. However, if the animal is not responding to alternative treatments or if alternatives are known to be ineffective, the use of antibiotics, parasiticides and other medications is allowed with the additional

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species and the condition for which the treatment is intended."

c) " If the products permitted by 6.6.10 a) and b) are ineffective in combating illness or injury, prescribed veterinary drugs not listed in this standard or in Table 5.3 of CAN/CGSB-32.311 may be administered to breeding stock, layers or dairy animals with written authorization by a veterinarian. Some restrictions apply (see 6.6.2, 6.6.11 d) and 6.6.12). With the exception of parasiticides administered according to 6.6.11, meat from animals treated with veterinary pharmaceutical drugs not listed in Table 5.3 of CAN/CGSB-32.311 shall not be organic."

d) "If a veterinary drug is administered and it does not have specific withdrawal requirements, a withholding period of twice the label requirement or 14 days, whichever is longer, shall be observed before livestock products from treated animals may be considered organic."

e) "Animals that require the use of antibiotics or other substances restricted in 1.5 e) for the same disease for three consecutive years shall be removed from the herd within nine months following the last course of treatment."

f) "In emergencies, antibiotic treatment of dairy animals is permitted under the following conditions:

1) The operator shall have written instructions from a veterinarian indicating the product and the treatment method to be used;

2) Treatment shall result in a milk withdrawal period of at least 30 days after the last day of a course of treatment, or a withholding period that is twice the label requirement, whichever is longer;

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restrictions outlined in 6.6.10 b. "Chemical, allopathic veterinary drugs" refer to synthetic, pharmaceutical drugs used in mainstream veterinary practice.

6.6.10 c) The intent of 6.6.10 c) is to allow the use of any veterinary drug when needed to treat an animal even if not specifically mentioned by the standards (e.g., in 6.6.10, 6.6.11 or listed in the Permitted Substances Lists). Restrictions apply. For example, any animal that receives antibiotics even just once or receives more than two treatments of parasiticides can never be sold for organic meat (see details in 6.6.11 g) and h).

6.6.10 d) The label on any veterinary medication states the length of time required after the use of the medication before a livestock product (e.g., meat, milk) can be consumed. In organic production, this time must be doubled. In cases where there is no withdrawal listed or it is very short, a minimum of 14 days is required unless the annotation in the Permitted Substances Lists (PSL) states otherwise.

There are no exceptions to the length of the withdrawal period even if no residues are detectable in the product. There are, however, restrictions on when, if ever, the animal products can be considered organic.

6.6.10 e) If an animal has to be treated repeatedly for the same condition, it is not well adapted to the production system and must be removed from the organic herd or flock. For this reason, the 2020 standards specify that if animal was treated with prohibited substances for the same problem three years in a row, it must be removed from the herd.

6.6.10 f) Antibiotic treatment of dairy animals is allowed only in emergencies, not on a regular basis. It is not possible to keep the animal in organic production if it has to be treated more than twice during any year. It makes no difference whether the treatments are with antibiotics or parasiticides. If two drugs are used at the same time, it counts as two treatments. After a third treatment the animal must undergo a 12-month transition before milk can be organic.

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3) Antibiotic use shall be documented in herd health records;

4) If dairy animals receive more than two treatments of veterinary drugs annually, whether of antibiotics, parasiticides, or one of each, they shall lose their organic status and go through a 12-month transition period;"

6.6.11 "Organic livestock operations shall have a comprehensive plan to minimize parasite problems. The plan shall include preventative measures, such as genetic selection, pasture management, fecal monitoring and assessments of tissue at slaughter, and emergency measures in the event of a parasite outbreak. Hygienic cleaning and disinfection methods for barns, such as power washing, steam washing, floor burning and lime washing, shall be included in the plan as well as down time (i.e., when the barn is vacant). By way of an exception, if preventative measures fail due to, for example, climatic conditions or other uncontrollable factors, the operator may use parasiticides that are not listed in Table 5.3 of CAN/CGSB-32.311, provided that:"

a) "observation of the animal, fecal test results, or assessment of tissue as appropriate for the species indicate that livestock is infected with parasites;"

b) "the operator provides a written action plan, with a timeline, describing how they will amend their parasite control plan to avoid similar emergencies;"

c) "the operator has written instructions from a veterinarian indicating the product and method to be used, including provisions to avoid developing parasite resistance such as rotation of parasiticides;"

d) "withdrawal times are twice the label requirement or 14 days, whichever is longer;"

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6.6.11 The written plan has to clearly state all the measures that are in place to prevent parasites reaching a level that negatively affects the welfare of the animals. The plan cannot rely on the regular use of synthetic parasiticides (anthelmintics). Regular pasture rotation is a key element of any plan; the length of the rotation required depends on the particular parasite and the climate. Another strategy is selecting animals that are resistant to infection as breeding stock. Thorough disinfection of barns is critical to control parasites in pork and poultry production.

An exception is allowed in recognition that internal parasites are problematic for young livestock, particularly for lambs under certain climatic conditions. The operator must prove that parasites are the problem and consult with a licensed veterinarian before any treatment occurs. This exception was not intended for external parasites, such as lice and ticks.

b) Such treatments cannot be a regular part of the annual management cycle. Operators need to provide a detailed plan describing how they will prevent future parasite problems. The exception can't be applied for the same herd or group of animals or the same production unit two years in a row.

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"If these conditions are met, the following restrictions apply:	
e) the exception cannot be granted for a group of animals or an entire production unit for more than two years in a row for the same problem;	
f) a dam from any species may receive only one treatment of parasiticides during gestation;	f) If a cow, ewe or sow is treated with parasiticides during gestation, this treatment does not affect the organic status of the offspring.
g) meat animals from any species less than 12 months old shall receive at most one parasiticide treatment. Meat animals 12 months of age or older that receive more than two parasiticide treatments in their lifespan shall lose their organic status;	g) Animals sent to slaughter before they are one year old cannot be considered organic if they were treated more than once with dewormers. Older meat animals can maintain organic status as long as they are not treated with parasiticides more than twice during their lifetime. Treated livestock must be clearly identified and precise records kept of any treatment.
h) dairy animals that receive more than two treatments in a 12-month period, whether of parasiticides, antibiotics or one of each, shall lose their organic status and go through a 12-month transition period.	
i) dairy cull animals that receive more than two treatments with parasiticides over their lifespan shall never be considered organic for meat;	i) If an animal is culled from the dairy herd and has received more than two parasiticide treatments during its lifetime (or just one antibiotic treatment), meat from the animal would not be organic.
j) dairy cull animals that receive antibiotics shall never be considered organic for meat;	
k) swine breeding stock animals that present with a high parasite load may receive up to three parasiticide treatments in a year as part of a parasite reduction plan. This exception cannot be applied systematically (refer to 6.6.11 b) and e));	
l) laying hens that receive more than two parasiticide treatments in a 12-month period shall lose their organic status. Treatment of the flock, rather than individual hens, is permitted."	l) In situations where parasites are identified as the cause of increased mortality or other health issues in a layer flock, two treatments in a year are allowed without loss of status. There is no exception for meat birds (i.e., parasiticides cannot be used on the birds). The operator must develop a new
6.6.12 "Poultry or breeding livestock treated with a parasiticide or veterinary drug not listed	

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in Table 5.3 of CAN/CGSB-32.311 shall be considered non-organic meat animals. Exceptions pertaining to parasiticide use may apply (see 6.6.11)."

6.6.13 "Injured, diseased or sick animals shall be given individual treatment designed to minimize pain and suffering, which may include euthanasia."

6.6.14 "Forced moulting of poultry is prohibited."

6.7 Livestock living conditions

6.7.1 "The operator shall establish and maintain animal living conditions that accommodate the health and natural behaviour of animals, including:"

a) "access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and daylight, suitable for the species and stage of production taking into consideration the climate and the environment;"

b) "access to fresh water (see 6.4.5) and high-quality feed that meets the needs of the animal;"

c) "sufficient space and freedom to stretch out while lying down, stand up, stretch limbs and turn freely, and to express normal patterns of behaviour;"

d) "space allowances in proportion to local conditions, feed production capacity of the operation, livestock health, nutrient balance of livestock and soils, and environmental impact;"

e) "production techniques that foster the long-term health of livestock, especially when high levels of production or growth rates are required of animals;"

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plan which addresses the failure of preventative measures that were already in place to prevent parasite build-up.

6.6.12 If it is necessary to use veterinary drugs that are not listed in Table 5.3 of the PSL, livestock can be considered organic for breeding purposes but meat from those animals or birds cannot be considered organic meat. The only exceptions are those listed for parasiticide use in 6.6.11.

6.6.13 An animal cannot be left to suffer; it must be treated. If there is no other alternative, it is expected that the animal will be humanely euthanized.

6.6.14 Forced moulting involves withdrawing feed for 5-14 days in order to trigger a flock to moult simultaneously with the intention of rejuvenating the hen's egg production capabilities. It is considered inhumane.

6.7.1 The basic requirements for any livestock production unit are outlined in 6.7; these are applicable (as appropriate) to any area used for livestock including:

· Barns- roofed structures for animal confinement;
· Runs- exercise areas connected to barns with little or no pasture;
· Corrals- fenced areas without pasture;
· Paddocks- fenced areas with or without pasture;
· Pastures- fenced areas with grass that animals can eat;
· Rangeland- large areas of unfenced and uncultivated pasture.

The opening sentence states the intent; 6.7.a to 6.7.j expand on the aspects that need to be considered to determine if the intent has been achieved. These requirements are described in more detail for specific types of livestock in later sections of the standard.

The operator and the certification inspector need to be aware of the natural behaviour patterns of the type of livestock being raised in order to interpret the standards as intended. For example, pigs should be raised in an environment which recognizes that they are strongly motivated to (i) graze, forage and root for food; (ii) explore and socialize with other members of their herd or litter; and (iii) build a nest at farrowing. Availability of straw is important in this regard.

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f) "good air quality. Humidity, dust particles and ammonia levels shall not impair the well-being of animals. Ammonia levels shall not exceed 25 ppm. If levels exceed 25 ppm, remedial action shall be taken;"

g) "appropriate resting and bedded areas that meet the needs of the animal. Indoor areas shall

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They also need access to a means of cooling (e.g., wallows, sprinklers or fans) whenever temperatures exceed 18C.

Although not explicitly stated, operators should consider other factors that potentially have negative effects on livestock health, behaviour or comfort. For example, negative factors may include poor construction design, spurious electrical discharge, excessive noise (louder than 100 dB) and toxic materials (e.g., lead paint, treated wood).

All facilities used to confine livestock must protect the animals' health and welfare. They should be conducive to the animals' normal social behaviour (including the ability to contact other animals and to escape from aggression), as well as allowing for normal feeding and bedding behaviour. In addition, facilities should provide the animals with hygienic, comfortable surroundings, fresh air and opportunity for exercise. Facilities must be designed to reduce the potential for injury, hence the requirement for non-slip flooring.

6.7.1 a) Access to the outdoors is necessary for all livestock, but it is also recognized that in the Canadian climate, there are times when outdoor access is problematic for some types of livestock. The fact that the weather is cold is not a good enough reason to keep animals confined. Protection (such as shade or windbreaks) is needed from excessive exposure to sunlight, extreme temperatures, precipitation and wind. Poultry do not usee outdoor runs when there is snow on the ground and it is therefore unreasonable to enforce the outdoor access requirement from November to March in many parts of Canada. However, poultry will venture outside, even in cold temperatures, if enriched verandahs or covered patios are provided.

6.7.1 f) Aerial contaminants inside barns (e.g., dust, ammonia) should not reach sustained levels that can be deleterious to livestock or human health. Good air quality is important for both welfare and productivity. Problems occur particularly in the winter months if animals are confined and more often with swine and poultry operations. Wet litter is an indicator of potentially high levels.

Exposure to ammonia levels above 25 ppm is hazardous for humans as well as livestock. Hydrion ammonia test paper is the simplest method of measuring if ammonia has reached harmful levels. Ideally levels should be kept at or below:

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be large enough, solidly built, comfortable, clean and dry. Resting areas shall be covered with a thick layer of dry bedding that absorbs excrement. If organic bedding is commercially unavailable, bedding material from non-genetically engineered sources that is free of prohibited substances for at least 60 days prior to harvest may be used. Non-agricultural absorbent bedding sources (for example, minerals, cellulose, sawdust, and wood shavings) can be used for livestock bedding as long as they meet the requirements in 1.4 and 1.5, and do not contain, or have not been treated with, prohibited substances;"

h) housing with non-slip floors. Solid flooring is preferable. Where non-slip slatted floors exist, the floor shall not be entirely of slatted or grid construction. The floor design shall ensure that the feet of the smallest animal cannot get caught in a void. Areas between voids shall be at least as wide as the feet of the animals;

i) animals that give birth indoors shall be provided with sufficient space and a clean, dry, well-bedded space with stable footing. Birthing facilities must allow for separation from other animals and all the mother's needs shall be accommodated, including milking and nursing, until the mother is recovered from the birthing process. Animals shall not be tied or tethered when giving birth;

j) construction and management of outdoor exercise areas and pasture to encourage appropriate use by livestock to prevent animal discomfort, and to avoid soil degradation, long-term damage to vegetation and the contamination of water."

6.7.2 "Access to the outdoors and freedom of movement may be restricted for the following

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· Ammonia: ≤10 ppm · Carbon dioxide: ≤ 3000 ppm
· Hydrogen sulphide: ≤0.5 ppm
· Dust: ≤ 10 mg per cubic metre (1 m^3=1.3 yd^3)

6.7.1 h) There is a higher incidence of foot and leg injuries on slatted floors than on solid ones. Consequently, not all of the floor can be slatted. While the standards do not specify the allowed percentage, it is generally recommended that no more than one-third of the total floor area be slatted.

The prohibition on totally slatted or gridded floors applies to all livestock facilities including poultry barns. In the case of poultry, "bedding" means a layer of litter material. Litter, such as straw or wood shavings, which the birds can use in natural pecking and foraging behaviour, is particularly important if birds do not have access to outdoor runs or enriched verandas in the winter.

6.7.1 i) Tie stalls cannot be used for birthing; the space provided for birthing indoors must allow for the behavioural needs of the animals to be met.

6.7.1 j) A livestock operation cannot negatively impact the environment and meet the requirements of the standards.

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reasons, provided that confinement is temporary:	
a) inclement weather;	6.7.2 a) If the weather or outside conditions are bad enough to seriously compromise the health of the animals or birds, they can be confined temporarily. For example, young birds are usually confined until fully feathered. Otherwise, operators must be able to identify specific risks (such as high parasite loads on the pasture) to justify keeping livestock confined. Farmers must also identify how they will address these issues to avoid or reduce confinement in the future. A difference in temperatures between inside and out does not constitute a legitimate reason unless the temperature difference is extreme. It is also not acceptable to confine livestock for the entire winter – most species will benefit from outdoor access, even in cold weather.
b) conditions in which livestock health or safety is jeopardized, given the stage of production; and	6.7.2 b) A hypothetical risk with no scientific justification or substantive evidence is not considered justification for restricting outside access for poultry. For example, the threat of avian flu posed by wild birds is not sufficient; however, a barn located under a flyway might be considered high risk during spring or fall migration.
c) conditions in which soil, water or plant quality would be compromised. The operator shall document the reasons for, and duration of, confinement. Measures taken to reduce the need to restrict outdoor access in the future shall also be documented when circumstances are within the operator's control."	6.7.2 c) Systems should be designed such that livestock and stocking densities do not negatively affect soil, water or plant quality. Also, organic livestock operations should not be located where there are known risks which would prevent animals from being allowed outside. Certifying bodies would only allow exceptions related to the risk of degrading the quality of water, soil or plants in exceptional circumstances.
6.7.3 "The continuous tethering of livestock is prohibited, with an exemption for dairy cattle under conditions specified in 6.12.1."	6.7.3 Tethering of dairy cows in winter is only allowed for existing barns with tie stalls under strict conditions. This exception is permitted until 2030 to give existing certified farmers and transitional farmers time to build new free-stall barns or adapt barns because it is recognized that not all producers can build a new barn. Temporary restraint is sometimes necessary for veterinary treatment and is allowed.
6.7.4 "Housing, pens, runs, equipment and utensils shall be cleaned and disinfected to prevent cross infection and build-up of disease-carrying organisms. Appropriate cleaners and disinfectants listed in Tables 5.3, 7.3 and 7.4 of CAN/CGSB-32.311 shall be used. If these substances are not effective, other cleaners and disinfectants are permitted on the recommend-ation of a veterinarian and with confirmation of a disease issue. In the event of a reportable disease, any effective disinfectant may be used to clean housing, pens and runs. Such uses shall	

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be documented. For equipment that comes into contact with food products, the requirements in 8.2 apply, and substances listed in Tables 7.3 and 7.4 of CAN/CGSB-32.311 are permitted."

6.7.5 "All livestock in a production unit shall be managed organically. Individual, non-organic animals may be present in the production unit if they are clearly identified and managed organically. Non-organic livestock production units may be present on an operation if they are clearly identified and kept separate from organic livestock production units."

6.7.6 "Organic animals may graze with non-organic animals on common land, that is, crown range or community pasture, provided that:

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6.7.5 The issue of parallel production in livestock differs from the requirements regarding parallel production in crops. A production unit includes the livestock, the barn where they are housed, feed and input storage areas, runs and pasture. A breeding herd and offspring are considered a single production unit.

Individual animals that have lost organic status may remain in the production unit as long as the non-organic animals are clearly identified and managed organically.

Organic and non-organic production can coexist for different livestock types on the same farm as long as they are clearly different production units (e.g., organic layer hens and non-organic hog production). If similar types of livestock are kept in different production units and not managed organically, complete separation must be ensured. This would require separate records, barns, separate feed and input storage areas, separate runs and separate pasture, etc. For example, if there are two layer flocks housed in different barns on the same property, one organic and one non-organic, all aspects of the operation need to be clearly separated including egg cleaning and packing. Ideally the organic products would also be clearly distinguishable (e.g., brown eggs for the organic operation and white eggs for the non-organic one). The same applies to meat birds or turkeys: complete separation of all aspects of rearing and processing is required if one flock of meat birds (or turkeys) is organic and the other is not.

If an operator has an organic and non-organic dairy herd of Holsteins, for example, the herds should be on different farms or at the very least in different barns with separate feed storage areas, separate pastures and different milk tanks that are clearly identified. If the herds use the same milking parlour, specific protocols are needed to prevent unintended

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a) documentation confirms that the land has not been treated with prohibited substances for at least 36 months;

b) documentation confirms that health care and feed products available to organic livestock while on common land are in accordance with this standard;

c) identification permits a clear distinction between organically and non-organically raised animals."

6.7.7 "For new installations or replacement purposes, wood for livestock barns and shelters treated with prohibited substances is allowed if livestock or feed does not come in contact with the wood. For existing barns and shelters, operators shall take measures to prevent contact, such as applying a barrier or establishing a buffer zone. If major renovation of barns on existing operations is required in order to comply, operators are granted an extension until December 2023. For fence posts, see 5.2.3."

6.8.1 "Manure management practices used to maintain areas in which livestock is housed, penned or pastured shall be implemented in a manner that minimizes soil and water degradation."

6.8.2 "Manure storage and handling facilities, including composting facilities, shall be designed, constructed and operated to prevent contamination of ground and surface water. See also 5.5.2."

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contamination or commingling. Operators should milk the organic cows first and use only the permitted products for teat dips, cleaners and sanitizers for the whole operation even when milking the non-organic cows.

6.7.6 If herds are run on common land, operators will need to provide documentation from the relevant provincial or regional agency. Assurance will also be required from other producers with livestock on the common land to show that all the health care and feed products that they use (e.g., mineral licks) are permitted in the standard.

6.7.7 Most treated wood has been treated with a prohibited substance. It can only be used in barns or shelters if the livestock cannot come into contact with the wood.

6.8.2 Ensure the quantity of manure produced by the livestock can be handled so it does not become a liability. Aspects of manure management to be reviewed include:

- location and type of storage areas (covered/uncovered);
- location of wintering feeding sites;
- distance from watercourse;

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6.9 Livestock product preparation

"Wherever organic livestock product preparation takes place (for example, facilities used for milking), 8.1 and 8.2 apply."

6.10 Pest management in livestock facilities

"Clause 8.3 applies to pest management practices in and around livestock facilities."

6.11 Additional requirements for cattle, sheep and goats

6.11.1 "Herbivores shall have access to pasture during the grazing season. At other times, including the finishing phase, they shall have access to the open air or an outdoor exercise area, weather permitting. Exceptions to the pasture requirement can be made for:

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- timing of spreading;
- area of land available for spreading manure;
- frequency of scraping pens or yards;
- collection of run-off; and
- specific climate considerations (e.g., heavy rainfall or timing of snow melt).

In most parts of Canada, storage should be large enough to accommodate several months' worth of manure production.

Environmental Farm Plan programs provide detailed guidance. Provincial governments provide guidelines and/or regulations for manure storage and handling facilities that are intended to prevent pollution.

6.9 Organic integrity has to maintained at all times both on the farm and in any processing facility. For example, the requirements of 8 "Maintaining organic integrity during cleaning, preparation and transportation" apply to:

· milking parlours, bulk tanks and transportation of milk to the processor;

· egg cleaning and packing; and

· slaughter of livestock for organic meat.

6.10 Clause 8.3 outlines methods for prevention and control of pests on farms. Preventive pest management includes the removal of feces, urine and spilled feed as often as necessary to minimize smells and attractants for insects and rodents.

For fly control, acceptable methods include the use of parasitic wasps that kill immature stages of flies; sticky traps; and traps baited with an attractant.

Mechanical traps can be used for rodent control. Most commercial rodent baits are not acceptable, but products with cholecalciferol (vitamin D3) as the active ingredient are allowed; see the Permitted Substances Lists (PSL) Table 8.2.

Document all methods used. If permitted methods or substances are not effective, substances that are not on the PSL can be used if measures are taken to ensure there is no risk to organic product status or integrity.

6.11.1 As a general rule, herbivores cannot be kept in a barn and fed organic forage during the grazing season. Research has shown that providing dairy cattle access to pasture can

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	reduce the incidence of health problems such as mastitis, metritis and lameness. It is recommended that cattle be pastured for a minimum of 120 days per year during the appropriate seasons. Access to shade is needed to prevent heat stress during hot sunny days. Pasture should supply the majority of dry matter intake and nutritional requirements for cattle and sheep during the grazing season (even though in 6.1.3 the minimum requirement is only 30%). Whenever pasture conditions become inadequate to meet the body condition needs of the livestock, supplementary forage must be provided as needed. When growing conditions during the grazing season are not conducive to pasturing (e.g., drought), the animals should still spend time outdoors, even during the finishing stage. At least 4-5 hours a day are recommended.
a) breeding males; or b) young animals, when it can be documented that their health and welfare are jeopardized."	Access to the open air or exercise areas is also required for young herbivores; the exception in 6.11.1 c) is only for pasture. Examples of allowed exceptions to the pasture requirement: a) Bulls or rams may be kept without access to pasture when separated from the rest of the herd/flock outside of the breeding season or to ensure operator safety. b) Young animals, lambs in particular, may be kept off pasture at times when parasite loads are high enough to create health issues for them. Evidence will be needed to show the existence of a problem. Also, a plan will need to be developed to reduce or avoid this situation in the future.
6.11.2 "Minimum indoor and outdoor space requirements for cattle are shown in Table 1: Dairy and Table 2: Beef…"*	6.11.2 Cattle do not need to have indoor space. However, if indoor housing is used, a minimum amount of space is required for each animal. The indoor space for bedded pack and maternity pens described in the table is the measurement of the resting area. It does not include the feed alley (which is concrete). The values shown in the table are minimums. All animals in a pen should be able to lie down and rest comfortably at the same time. Space allowances should also take into account the presence or absence of horns.

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6.11.3 **Sheep and goat housing**

"Minimum indoor and outdoor space requirements for sheep and goats are shown in Table 3."*

6.12 **Additional requirements for dairy cattle housing**

6.12.1 "Tie stalls in existing dairy barns may be used for lactating dairy cows, and for a period of one month for the training of heifers raised in loose housing. Tie stalls are prohibited in new construction and major renovations. All use of tie stalls will be phased out of organic dairy production by December 2030. By December 2020, if tie stalls are used, dairy cows shall have an exercise period at least twice a week, preferably every day."

6.12.2 "In a free-stall system, the ratio of cows to stalls shall not exceed 1:1."

6.12.3 "Electric trainers are prohibited. The tails of cows in stalls may be tied to prevent the tail from lying in the gutter, provided that the tying allows for natural behaviour, free movement of the tail and quick release when necessary."

6.12.4 "If milking parlours are in use:

a) operators shall minimize animal waiting time between the time they are moved to the holding area and the time they return to the barn or pasture;

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It is not acceptable to have dairy cattle in tie stalls when giving birth; maternity pens are needed if cows are confined to barns for birthing.

Outdoor runs and pens include any yard or exercise area where the animals are confined outside without free access to pasture. When the barn design allows for free movement between inside and outside, there is no minimum requirement of outdoor space per head, however the run should be large enough for all cattle to be outside at the same time.

It is a good practice to have cows outside in the winter. When being outdoors is physically challenging in the winter, an open-sided barn can provide access to open air without the need to go outside. For the well-being of the animals in the winter, the most important requirement is to have exercise no matter where it happens.

6.11.3 When indoor housing is used for sheep or goats, the animal must have at least the amount of space listed in the table. It does not mean that sheep and goats require indoor space.

In Canada, sheep often have access to indoor housing during the winter months and at lambing. Depending on the predator threat, they may also be brought into pens or paddocks close to the barn at night.

6.12.1 For existing dairy barns designed for tie stalls, the tie stalls can be used until 2030 under strict restrictions as outlined. Tie stalls cannot be used for heifers except for a training period immediately before a heifer joins the milking herd.

If a new barn is to be built or major renovations are planned, tie stalls cannot be part of the design. To help reduce the negative effects of tie stalls which restrict movement, regular exercise periods are mandatory in months when cows are not going out on pasture.

6.12.2 One free stall is required for every cow in the herd. This is a maximum; ideally you want to have 5% of the stalls not occupied to give space for cows that are low in the hierarchy, such as young cows.

6.12.3 Electric trainers (cattle prods) are prohibited as of December 2020.

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b) portable milking units shall be available for sick or weak animals that are unable to make it to the milking parlour;

c) electric crowd gates are prohibited; and

d) non-slip flooring shall be used in the holding area, parlour and alleys."

6.12.5 "Calves may be housed in individual pens and hutches, up to three months of age, provided that the following conditions are met:

a) they are not tethered and have enough room to turn around, lie down, stretch out when lying down, get up, rest and groom themselves;

b) individual pens are designed and located so that each calf can see, smell and hear other calves;

c) individual housing has an area of at least 2.5 m^2 (27 ft^2) and a minimum width of 1.5 m (4.9 ft); and

d) outdoor hutches shall have access to an enclosed yard or run."

6.12.6 "Calves shall be group-housed after weaning."

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6.12.4 These requirements ensure that cows are not subjected to unnecessary stress at milking. Gentle handling, as well as clean udders, contributes to the quality of milk. Also, cows should not have to wait more than an hour from when they are brought in for milking until they are returned to the barn or pasture.

6.12.5 The operator can use individual housing or group pens for calves until they are three months old. Social contact reduces stress. This is why individual pens should allow calves to "see, smell and hear other calves."

A hutch with smaller dimensions than those listed in "c)" cannot be used even if a fence encloses a larger area. When hutches are used outdoors, some form of fencing is required to confine calves – they cannot be tethered.

6.12.6 Group housing of calves is encouraged as early as a few days after birth. Calves are social herd animals; group pens provide the opportunity to socialize and exhibit natural behaviour. Freedom of movement and exercise are also enhanced in group pens.

Group sizes should be sufficiently small to allow each calf uninhibited access to lying areas, feeders and water sources. Having small groups makes it easier for the farmer to observe the animals in order to detect health problems. Group sizes of less than 10 are recommended. At least 2.5 m^2 (27 ft^2) per calf is required.

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6.12.7 "Dairy replacement calves over nine months of age shall have access to pasture, as appropriate for the season."

6.13 Additional requirements for poultry

6.13.1 "The operator shall establish and maintain poultry living conditions that accommodate the health and natural behaviour of poultry as follows:"

a) "The keeping of poultry in row, battery, enriched or colony cages, is prohibited;"

b) "Poultry shall be reared in open-range conditions and have free access to pasture, open-air runs, and other exercise areas, subject to weather and ground conditions. Outdoor areas shall:

1) be free of prohibited substances for 36 months prior to their use;

2) be covered with vegetation, seeded if necessary, and periodically left empty to allow vegetation to regrow and to prevent disease build-up. To facilitate rodent control, a vegetation-free perimeter around poultry houses is permitted;

3) have effective overhead cover (for shade and protection from avian predators) distributed throughout the range area of barn-raised birds to encourage continual use by the birds. The cover may be natural (such as trees, shrubs and crops) or artificial (such as shade cloth, camouflage netting, screens or trailers). Roof overhangs over pasture may account for up to 50% of the required overhead cover if they are functional (i.e., they provide shade and protection from avian predators). By December 2023, operators shall submit a plan to ensure that this

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When very young calves are group-housed, try to minimize age and weight variation within the group (i.e., don't mix older, large calves with newborns). When milk is provided to group-housed calves only two to three times a day, each calf should have access to its own teat.

6.12.7 Pasture access is encouraged for all calves regardless of age. However, given legitimate concerns that parasite loads on pasture may negatively affect young replacement calves, it is not compulsory to provide pasture for grazing until calves are nine months of age. However, younger calves should have access to the outdoors when there are suitable weather and pasture conditions (i.e., the pasture has low levels of parasites, is not waterlogged, etc.).

6.13.1 b) The intent of 6.13.b is that poultry are able to range freely both inside and outside; it does not allow for total confinement. Some flexibility is allowed on the type of range (it can be pasture or runs) and when access is given (depending on weather, ground conditions or presence of predators). Details are provided in other clauses of 6.13.

Range can still be in transition when pullets are started, but the 36-month mark must have been reached by the time birds are ready to go outside.

The following is an excerpt from "Poultry welfare: Overhead cover for shade and protection" by the Organic Federation of Canada. Read more at organicfederation.ca/2020-review-canadian-organic-standards-highlights.

Leaving the barn to go out into a wide-open space can be intimidating for a chicken. Avian predators, such as hawks, can be a threat. Poultry are less likely to venture outside or to use all the range provided unless there is some cover in the form of trees, shrubs or constructed shade. Also, birds like a shady spot to escape the sun.

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overhead cover shall represent at least 10% of the minimum required range area (as outlined in Table 5 of 6.13.13) by December 2025; and

4) show signs of use as appropriate for the season;"

c) "In an emergency, when outdoor access results in an imminent threat to the health and welfare of poultry, access may be restricted. Outdoor access shall resume when the imminent threat ends. Producers shall document periods of confinement; and"

d) "Operators shall have an organic plan that describes outdoor access and how they will protect birds from disease and predators."

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The ultimate goal is to have more birds spend more time outside on the range. In clause 6.13.1.b 3), overhead cover on the range is required for both layers and meat birds to help meet this goal.

A number of options are available: a farmer can plant trees in the range but until these are large enough to provide cover, artificial covers can be used. To avoid excessive pressure on the pasture in shaded areas, farmers can use portable structures or materials, such as netting, tent-like structures or shelters that can be moved by tractors.

A large roof overhang, like a verandah, can help chickens feel more secure going out the popholes. This is not sufficient, however, to encourage the birds to explore more of the range. This is why the overhang (i) can account for only up to half of the required cover, (ii) must cover pasture, not just the gravel around a barn, and (iii) must be effective. For example, a small overhang (18-24 inches) that doesn't provide much cover might not be considered "effective."

· Inspectors will look for droppings or signs of scratching as evidence that the range is being used on a regular basis.

· The threat of predation cannot be used a reason to keep birds confined inside at all times; the design of the range must take predation risks into account.

In cold weather, it is not expected that birds have access to the outdoors. Birds will also need protection in heavy rain or wind. In general, outdoor access is expected from May to September but the season could be longer or shorter depending on location.

6.13.2 General requirements for layers

a) "Layers may be confined during onset of lay, that is, until peak production is reached. The laying flock shall have outdoor access for at least one-third of its laying life."

6.13.2 a) The reference to "at minimum of one-third of its laying life" recognizes the difficulty of providing outdoor access to poultry in the winter months in Canada. Although the standard provides an allowance to keeping layers inside until peak production (around 28-30 weeks of age), the birds are less likely to venture outside afterwards if they have not been trained to do so at an earlier age.

Providing outdoor access, an enriched verandah or a covered porch helps pullets become comfortable with the conditions that will exist in the layer barn. Consequently,

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b) "Rearing facilities that closely match the conditions that exist in the layer barn are recommended. Pullets, however, may be kept indoors until they are fully immunized."

c) "Layer flocks shall be limited to 10,000 birds. More than one flock may be in the same building if the flocks are separated and have separate runs."

6.13.3 Enriched verandahs for barn-raised layers

a) "Enriched verandahs shall be used when barn-raised layers do not have access to outdoor runs because of weather or disease constraints."

b) "An enriched verandah is a covered, uninsulated, unheated extension to a poultry barn. Birds shall have access to the enriched verandah year-round during daylight hours, at least from spring through fall. The enriched verandah shall:"

1) " have an outdoor climate but offer protection from inclement weather (e.g., wind, rain), rodents, predators and disease threats;

2) represent at least 1/3 of the footprint of the indoor barn area;

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they will likely be more comfortable using the range when they are layers.

b) In cases where large pullet flocks are undergoing an immunization program aimed at building immunity to known diseases, outdoor access is not compulsory. A compromise needs to be made balancing the value of allowing pullets outside with the interests of keeping the birds healthy throughout their life. It is therefore recommended that pullets are raised in facilities which prepare the bird for the environment in the layer barn (such as having access to outdoor runs, enriched verandahs and/or covered porches) as this will help them adjust with minimal stress, thereby reducing the risk of feather pecking and susceptibility to disease.

6.13.2 c) Division of larger layer flocks into smaller units encourages the use of range and helps minimize problems with feather pecking and stress. For stationary barns, two or more runs are recommended to make it easier to comply with 6.13.2c. Having two or more runs allows one or more to regrow while the other is in use. Before releasing the birds back into a run, be sure that the vegetation has regrown and provides complete ground cover.

6.13.3 The following is an excerpt from "Enriched verandahs: a playground for laying hens" by the Organic Federation of Canada. Read more at organicfederation.ca/2020-review-canadian-organic-standards-highlights.

New for 2020. Barn-raised laying hens need access to an enriched verandah to get fresh air, a bit of exercise and a chance to play at certain times whenever they can't go outside due to bad weather or risk of exposure to disease.

"Enriched verandahs" are sometimes called "winter gardens" but the space is not just used in the winter. In the summer, the birds may need access to the enriched verandah on rainy days or when Avian Influenza is a threat (e.g., a flock of wild geese are grazing in the run). In parts of Canada, it might be used mostly from early spring to late fall because it may be too cold to use during the mid-winter. The enriched verandah serves many purposes. Because it has natural lighting and a temperature similar to the outdoor temperature, the verandah is a transitional zone between the barn and the

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3) have natural lighting which may be supplemented with artificial lighting;

4) have a sand floor, a dirt floor or a solid floor covered with bedding, such as straw or wood shavings, for comfort and warmth and to encourage foraging, scratching and dust-bathing behaviours;

5) offer enrichments (examples include perches, trays of greens, hay bales, pecking objects) to encourage natural behaviours; and

6) not count towards indoor or outdoor space allowance."

c) "Enriched verandahs shall be provided in new construction for barn-raised layers. They shall be added to existing infrastructure when the operator cannot demonstrate that at least 25% of layers utilize the outdoor range when there are no weather or disease constraints."

d) "All existing enriched verandahs shall be accepted as they are as of December 2020; they are exempt from 6.13.3.b.2 and 6.13.3.b.6."

e) "If the operator can demonstrate that the addition of an enriched verandah of the size specified in 6.13.3b is not possible for an existing barn due to lack of space or because of design limitations of the existing barn:

1) a smaller enriched verandah shall be allowed provided it is as close in size as possible to the requirement of ⅓ of the footprint of the indoor barn area; or

2) the enriched verandah shall be constructed in the uncovered outdoor area and, as an exception, may count as part of the outdoor space allowance; or

3) operators are granted an exemption that permits the use of existing infrastructure until December 2030, provided that a plan for the

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outdoors; this may help birds feel more comfortable going outside and using the range.

The enriched verandah contains environmental enrichments such as microgreens or hay to allow more natural foraging behaviour, and/or hanging objects (strings, corn cobs, balls) that the birds can reach up and peck. To stimulate jumping, perching and playing, farmers can provide perches, straw bales, step stools which birds can perch on or hide under, and/or pails with holes in the bottoms which are laid on their sides. These enrichments provide opportunities for the poultry to express their natural behaviour more fully and reduce anti-social activities (such as feather pecking).

Enriched verandahs are not required either for pullets or broilers. Also, they are not needed for layers that go outside in chicken tractors or portable shelters during the summer, however all these birds would also benefit from having access to such facilities.

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new construction or renovation is in place by December 2025."

6.13.4 "Layers shall have access to an adequate number of nests, as recommended by best management practices."

6.13.5 "Perches shall meet the following criteria:

a) In the first weeks of life, layer chicks shall have continuous access to perch space.

b) During the pullet rearing phase, adequate perch space shall be appropriate for the final production system and accessible at all times and at varying heights.

c) Laying hens shall have a minimum of 15 cm (5.9 in.) perch space per hen, accessible at all times and at varying heights.

d) Perches for laying hens shall be purpose-designed, such as alighting (landing) rails in aviaries, which allow birds to wrap their toes around the rail. Feed and water trough edges, slatted floors and ladder rungs are not considered purpose-designed perching objects, but may be used to provide additional perch space beyond what is required in 6.13.5 a, b and c.

e) Perches shall be a minimum diameter or width of 1.9 cm (0.75 in.).

f) Other poultry are exempt from 6.13.5 a, b, c, d and e.

NOTE: Producers are advised to review the Code of Practice for the Care and Handling of Pullets and Laying Hens (see 2.5) to ensure they meet additional perch requirements for both pullets and adult layers contained therein."

6.13.6 General requirements for meat chickens and turkeys

a) "Meat chickens that will be raised outdoors in shelters without indoor access shall have access to pasture on a daily basis by four weeks of age, unless weather conditions endanger the

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6.13.4 According to the 2003 Code of Practice, the recommendations are 1 box per 4-5 or 5-8 birds, or 120 cm^2 (18.6 in^2) per bird in communal nests.

6.13.5 The standard requires perches for layers but provides no information on the need for perches for other birds, even though turkeys like to roost. When perches are provided, the size, number and height of perches should allow all birds to roost comfortably. For example, a perch height of 18 cm (7 in) is recommended for hens and 40 cm (16 in) for turkeys.

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health or safety of the birds. Turkeys shall have outdoor access by eight weeks of age."

b) "Barn-raised meat chickens shall have outdoor access on a daily basis by at least 25 days of age when there are no weather constraints. Operators shall take measures to increase use of the pastures and outside exercise areas and have a goal of a minimum of 15% of birds on range when there are no weather constraints. Operators shall document the use of the range and continue to strive to increase the number of birds on the range in future years. This will be reviewed by December 2025.

NOTE: Potential measures for increasing the usage of pasture, outdoor range and outside exercise areas:

- use slower-growing foraging (hardy) breeds (characterized by a growth rate of no more than 45 g/day);
- use a ration that has been nutritionally adjusted for slower growth (i.e., lower in protein);
- implement an older slaughter age (e.g., 60 days) provided the health of the birds can be maintained;
- allow outdoor access before the minimum age specified;
- provide mobile units for summer production;
- provide effective overhead cover on pasture;
- provide pasture enrichment (e.g., feed, water, perches, etc.);
- improve pasture access (e.g., pophole changes, etc.); and
- provide enriched verandahs (see descriptions in 6.13.3 b)."

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6.13.6 b In organic poultry production, the goal is not just to provide access to the outdoors, but to have birds actually use the outside range. Ideally all the birds will go outside when weather permits and this is accomplished in certain types of production, such as chicken tractors or mobile production units that are moved frequently on pasture.

When poultry are raised in large flocks in barns, the birds are less likely to go out. The 2020 Canadian Organic Standards (COS) require a goal of at least 15% of the birds being out on the range when there are no weather constraints. This issue will be reconsidered during the next review of the standard and the 2025 COS may require that a higher percentage of birds be shown to use the range.

It's up to the farmer to encourage the birds to leave the barn and explore the outside. The COS provides several suggestions on how this can be accomplished. For example, farmers can choose breeds that are more active. Another approach is to slaughter at a later age (often using slow-growing breeds or lower-protein rations). This allows for more time for the birds to explore the outdoors.

Many organic standards around the world require slow-growing breeds. Bio Suisse defines these as breeds in which "The average daily weight gain may not exceed 27.5 g up until the 63rd day of age." The Soil Association defines slow growing breeds as ones in which the daily weight gain averaged over the life of the bird is no more than 35g per day (these figures should be taken from published breed data), and the maximum daily weight gain measured on the farm is never more than: i) 60 g in the case of chickens; ii) 105 g in the case of male turkeys; or iii) 75 g in the case of female turkeys."

The slow-growing breeds, such as the Sasso, tend to be hardy birds and better at foraging than the common breeds selected for rapid weight gain in intensive poultry operations.

Another approach is to make the outdoor range more inviting through the use of shade, overhead cover, environmental enrichment outside, different types of forage, etc. Also, birds are more likely to venture outside if there isn't a dramatic difference between the outside and inside barn environment. This can be facilitated by providing a transitional space, such as the enriched verandahs described in 6.13.3.

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6.13.7 "Poultry barns shall have sufficient exits (popholes) to ensure that all birds have ready access to the outdoors."	6.13.7 The design of the barn, including the location and size of exits, are important considerations determining whether or not birds use the outside range.
6.13.8 "Exits shall: a) allow passage of more than one bird at a time, and be evenly distributed along the line of access to the outdoor range; b) shall correspond to the requirements shown in Table 4 for the number and size of exits."	6.13.8 The specific requirements are intended for larger-scale poultry operations to facilitate range access. Exit and entry pop holes must be large enough so dominant birds can't prevent others from using the openings. The poultry barn should be designed in a way to address other constraints to access, such as distance from the pophole, height above ground and the total numbers of birds. "Combined width" means adding up the width of each exit that is open to provide outdoor access. Exits that are kept closed (for example, those on the opposite side of the barn which might be used to access a second run when resting the first run) are not included in the calculation. For example, a flock of 6000 hens will require a total of 12 metres (13.1 yards) with openings at least 50 cm (20 in) wide evenly spaced along the side of the barn adjacent to the range. If small flocks are obviously accessing range easily at all times, changes do not have to be made in order to comply with "evenly distributed along the range of access."
6.13.9 "When existing organic poultry barns do not meet the requirements of 6.13.8 b) (Table 4), either the distance from an exit from any-where in the barn shall be no more than 15 m (49 ft), or the operator shall provide evidence that birds utilize outdoor range. Evidence shall demonstrate that 25-50% of birds are on range when there are no age or weather constraints."	6.13.9 Existing barns do not have to modified providing there is nowhere in the barn which is more than 15 m (49 ft) from an exit complying with 6.13.8. Alternatively, evidence such as date-stamped photos is required to show a good proportion of the flock is regularly on range at any one time. Certification bodies may decide to conduct unannounced inspections to verify the fact.
6.13.10 "Bedding material shall be provided as litter material and kept dry. Houses with slatted floors shall have a minimum of 30% solid, bedded floor area to encourage dust bathing, scratching and foraging behaviours."	6.13.10 In order to accommodate the natural behaviour throughout the life cycle, indoor housing for poultry must provide an area of solid floor covered with dry litter materials such as straw, wood shavings, sand or turf, so that the birds can peck and scratch. Wet litter should be avoided because it increases ammonia levels and encourages darkling beetles.
6.13.11 "Poultry shall have access to at least the number of waterers and feeders required by the relevant Code of Practice (see 2.5)."	6.13.11 Enough feeder and drinker space should be provided to reduce competition and aggressive encounters. The amount available is also important; 100 layer pullets may

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drink 20 litres (5.3 gallons) per day under hot weather conditions, and 100 heavy turkeys may drink up to 180 litres (48 gallons) per day.

Follow manufacturers recommendations if they require more space than the recommended minimums found in the Codes of Practice:

- Trough-type waterers: 2.5 cm (1 in) per broiler, 3-4 cm (1.2-1.6 in) per adult layer, 2.5-3.2 cm (1-1.3 in) per turkey (assuming both sides available, if not double space allocation).
- Nipple-type waterers: 5-20 broiler chickens per nipple or 6-10 adult layers per nipple.
- Bell drinkers: one for 120 broilers, one for 50-75 adult layers, or one for 100 turkeys.

6.13.12 "Poultry housed indoors shall be provided with natural light either with evenly distributed windows or light-permeable fabric. The total window area shall be no less than 1% of the total ground-floor area, unless it can be demonstrated that natural light levels are sufficient to read a document, such as a newspaper, anywhere in the barn. If daylength is artificially prolonged, the total duration of light shall not exceed 16 hours, and shall be terminated by gradual reduction of light intensity followed by 8 hours of continuous darkness. The following exceptions are permitted and shall be documented:

a) periods of increased lighting are permitted due to the stage of production, for example, the arrival of chicks and turkey poults;

b) decreased lighting intensity is permitted due to animal welfare concerns, for example, outbreaks of cannibalism."

6.13.13 "The maximum indoor and outdoor densities are shown in Table 5."

6.13.12 Natural light is considered to be beneficial to bird welfare. It enriches the environment and allows birds to seek out different levels of light for different activities. Good light distribution with a minimum amount of shadow is important; patches of light will attract birds to those spots rather than allowing for an even distribution of birds in the barn.

When windows are less than 1% of total ground floor area, the inspectors will determine if light levels are sufficient to read in the barn when all the lights are turned off. Light levels should be measured furthest away from the source of light. Although some people may be able to read at lower light levels, 20 lux (at bird height) is a recommended light level for broilers and layers. The brighter lighting is important for broilers to stimulate activity which can help reduce the incidence of leg disorders and contact dermatitis (hock and foot pad burn). In comparison, on a bright sunny day, levels might be 80,000 lux outside the barn. Smart phone apps for measuring light levels are available.

Lower lighting levels cannot be used as a preventative method to prevent cannibalism, only to help deal with an actual problem.

6.13.13 The numbers in the table refer to the amount of space required for all birds in the flock, even if only a portion of the flock is using the outdoor range at any one time. There is a larger space requirement for outdoor areas because birds are more active in an outdoor environment. For broilers and turkeys, the requirements are given in

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"kg/m^2" to allow for the different sizes of birds as they grow and different finished weights.

Both the amount and quality of space are important. Space requirements are based on the minimum needed for birds to perform all of their natural behaviours without negatively affecting birds around them. Generally, the more space birds are provided, the better they fare.

The footnote allows for flexibility in exceptional circumstances. For example, maximum density may be increased if slaughter time is delayed due to regional flooding that leads to road closures or a pandemic causes an abattoir to shut down temporarily. If an operator needs to exceeds maximum density more than once, steps must be taken to prevent this happening in the future. For example, if road closures are common due to spring flooding or winter snowstorms, the operator must take this factor into consideration by ensuring that maximum density will not be exceeded even if the birds must be kept for longer than expected.

6.13.14 "Multi-level aviary systems for layers shall have no more than three levels or tiers above ground level. Total floor space, for calculation of solid-floor area and bird density requirements, shall include all usable floor levels (see 6.13.10 and 6.13.13). If enriched verandahs are used to provide required scratching areas, they shall be accessible year-round."

6.13.14 An enriched verandah is another name for a screened-in porch or winter garden which has natural light and fresh air. See details in 6.13.3.

6.13.15 "For pasture-based operations with mobile units, stocking density shall be no more than 2000 layers/ha (800 layers/ac.), 2500 broilers/ha (1000 broilers/ac.) or 1300 large birds (turkeys/geese)/ha (540 large birds/ac.), based on the total amount of land used for rotational poultry pasture. When birds are in moveable field shelters, the shelters shall be moved daily, whenever possible, and at least once every four days, taking into consideration the impact on the birds and on the land. Density within the moveable shelters shall correspond to the indoor density described in 6.13.13."

6.13.15 "Pasture-based operation" refers to those operations that use pasture as a component of birds' diets (as opposed to barns with runs that contain minimal amounts of forage).

When birds are on pasture, two important environmental factors must be considered:

- the potential for build-up of parasites and disease; and
- the negative effects of high nutrient loads on soil and groundwater.

For these reasons, the size of the flock must be appropriate for the amount of land available and mobile units must be moved regularly.

The numbers given for pasture-based operations refer to the amount of land needed assuming that birds will be rotated through different pasture areas. They do not refer to the density of birds on a given area of pasture at one

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	moment in time. For example, if a turkey producer has a hectare of land for pasturing, only 1300 turkeys can be raised at one time, which is equivalent to 7.69 m^2/turkey. For broilers, the equivalent is 4 m^2/ bird. Moveable field shelters which have to be moved daily restrict a large number of birds to a relatively small space. This is not the same as moveable housing or mobile units from which the birds range. With moveable housing, the birds may be free range or enclosed by portable fencing. The fencing might be moved frequently, possibly daily, while the shelter is moved less often. If the producer uses mobile pens which are moved regularly, the actual density inside these units will be considerably higher. For the broilers, the density cannot be more than 21 kg/m^2; for turkeys, the density cannot be greater than 26 kg/m^2. For optimal flock health and ongoing sustainability, larger areas are recommended, recognizing that maximum productivity per unit area should not be the primary goal of organic production.
6.13.16 "Buildings shall be emptied, cleaned and disinfected, between flocks, and runs shall be left empty to allow the vegetation to grow back."	
6.13.17 "Ducks and geese shall have access to a water area created for their use, whenever weather conditions permit. Facility design shall address the need to prevent commingling of wild waterfowl and domestic poultry."	6.13.17 Waterfowl need water, however allowing access to a stream, pond or lake used by wild ducks or geese is considered a serious health risk for avian influenza and must be avoided.
6.14 **Additional requirements for rabbits**	
6.14.1 "If required for comfort and security, rabbits may be temporarily confined, for example, overnight, in cages or hutches. Continuous confinement is prohibited."	6.14.1 The intent of the standard is to provide rabbits with an environment that allows for natural behaviour and addresses their need for social interaction, comfort, and physical and physiological well being. Continuous confinement means keeping rabbits in a small cage or hutch whether indoors or outdoors; this method is not allowed for organic production. Overnight confinement is allowed to protect from predators. If rabbits are confined individually for any purpose, the space available must still meet the requirements of Table 6, as well as allowing for visual and auditory contact with other

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	rabbits. Bucks may need to be housed separately to prevent fighting. Temporary close confinement that may be required for performing certain procedures, such as vaccinations or marking, is allowed.
6.14.2 "The use of mobile pasture pens is permitted, provided that pens do not restrict natural behaviour and they are moved at least once every three days."	6.14.2 The use of large wire cages as a mobile pasture pen is not considered confinement in the context of the standard. Instead it is considered one solution for providing access to pasture. Consider the size of the group when using mobile pens or permanent pens. Welfare can be compromised if groups of breeding rabbits exceed 10 animals or when groups of meat animals exceed 40 animals. A regular movement of pens prevents pasture areas being eroded by the activities of the rabbits or degrading by overgrazing. Rabbits should be able to graze fresh pasture that has not been polluted with manure.
6.14.3 "Rabbits shall have space to run, hop and dig, and to sit upright on their back legs with ears erect. The minimum indoor and outdoor space requirements are shown in Table 6."	6.14.3 The need for sufficient space to allow for natural and instinctive behaviours apply whether the rabbits are in indoor housing or in covered pens on pasture. There is no one way to raise organic rabbits; the table provides for different housing options.
6.14.4 "Rabbits shall not be subjected to continuous lighting or kept in permanent darkness. During the day, rabbits shall be able to clearly see each other and their surroundings."	6.14.4 Rabbits naturally spend time in dark environments but also forage outside at different times of day.
6.14.5 "Does about to give birth shall be given secluded individual burrows or nest boxes for kindling (birthing)."	6.14.5 This requirement ensures the provision of a secure environment for a doe and young, and allows a doe to be removed from a group setting in order to build her nest a few days before she gives birth. Nest boxes should be in a dark area and have ample fresh dry bedding. It is recommended they be at least 48 cm (18 in) long by 25 cm (10 in) wide and 23 cm (9 in) high.
6.14.6 "The doe and litter shall have free access to outdoor range and foraging areas once the kits reach 21 days of age."	6.14.6 Although not a requirement of the standards, kits should also be able to leave the burrow after 14 days.
6.14.7 "Weaning before the kits are 30 days of age is prohibited. However, if the welfare of the doe or kits is compromised, earlier weaning is permitted."	6.14.7 This requirement will limit the number of litters possible in one year. Kits begin to eat more solid food at about 4 weeks of age as their digestive systems mature and doe milk yield drops. There are no requirements for the age of breeding in order to allow for operations based on a natural colony system where there is no intervention at

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	mating. Keep records of weaning dates and reasons for earlier weaning. Newly weaned kits should be kept with their litter mates.
6.15 Additional requirements for pigs and farm-raised wild boar	
6.15.1 "The number of animals on a production unit shall reflect the size of the available land-base, which comprises land owned, leased and available for spreading their manure, and based on a balance between animal units, feed production and manure management. Farrow to finish operators shall not exceed 2.5 sows/ha (1 sow/ac.)."	6.15.1 This paragraph emphasizes the holistic nature of organic production. There is not a requirement that the farm produce all its own feed but there does need to be sufficient land for spreading manure without negatively impacting the environment. This land does not necessarily need to be part of the home farm.
6.15.2 "Pigs shall have access to outdoor exercise areas with the exception of sows with nursing piglets. Outdoor access can be temporarily restricted as stated in 6.7.2.	6.15.2 Although the standards do not dictate that organic pigs be raised on pasture, the standards encourage access to pasture or fields from spring to fall, particularly for the breeding herd. Outdoor rearing is possible in Canada even in winter months if there is not deep snow and shelter is provided, The choice of breed is important for success of these operations.
a) Outdoor areas may include woodlands, other natural environments, soil or concrete exercise areas. Access to pasture is recommended but not mandatory. If pasture areas are degraded and cannot be used by the pigs, other outdoor exercise areas shall be provided in order to meet the requirements for outdoor access and rooting.	
b) An outdoor exercise area may be covered as long as at least three sides of the structure are open.	
c) When outdoors in open areas (e.g., pasture), pigs shall have access to shaded/sheltered areas suitable for the whole herd so they may take cover during inclement weather.	
d) Pigs shall not be confined exclusively to concrete yards without access to an indoor or outdoor bedded area.	d) It is critical that the pigs are allowed to express the natural rooting behaviour. When the pigs cannot go out on pasture, for example when conditions are too wet, the operator can allow the pigs to use exercise areas on concrete pads. However, the pigs must be provided with a place to root in soil or compost (e.g., a rooting box or a specific rooting area) and have access to a bedded area (inside or outside).
e) Guidelines around management of outdoor areas (6.7.1), preventing occurrence and spread of parasites (6.6.1c, 6.6.11) and permitting rooting for pigs (6.15.7) shall apply.	

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NOTE: Pasture management practices implemented to avoid degradation and prevent parasite build-up may include:

- rotation of pastures with annual crops;
- having a paddock rotation plan depending on the season;
- leaving a paddock empty for 5 years before repopulating with growing pigs;
- keeping sows in a paddock for a maximum of 2 years before providing the paddock with a rest period."

6.15.3 "Sows and gilts shall be kept in groups, with the following exceptions:

a) individual pens are permitted for the protection of females during estrus, or for other health reasons, for a period of up to five days;

b) sows may be individually housed in a pen (7.5 m^2 (81 ft^2) per sow with litter) for up to five days prior to farrowing and during the suckling period;

c) if needed for piglet protection during the suckling period, sow restraint is permitted for a maximum of three days. Sows may be restrained for a shorter period to protect the operator during piglet processing or pen cleaning;

d) the use of farrowing crates as a means of restraint is prohibited."

6.15.4 "Piglets shall not be weaned before four weeks of age. However, if the welfare of the sow and piglets is compromised, earlier weaning is permitted."

6.15.5 "Piglets shall not be kept on flat decks or in cages."

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6.15.3 Gestation stalls and traditional farrowing grates which limit movement are not allowed in organic production. Stall designs which permit sows to come and go at will are allowed. Confinement is allowed during periods of high levels of aggression, for example, during estrus, to prevent injury which might occur in a group setting.

Privacy at farrowing is important; it reduces stress and allows piglets and sows to become accustomed to each other. The length of the suckling period will determine the maximum time allowed for individual housing. It is better for the piglets to be in the same familiar environment until they are separated from the sow but that does not preclude a group of sows and piglets being housed together if piglets are about the same age.

Additional restraint is allowed when piglets are very young and in danger of being crushed.

6.15.4 Piglets benefit from longer exposure to mother's milk –the optimum time frame for both sow and piglets is considered to be 30-35 days.

6.15.5 Flat decks were devised as a method of housing small pigs in intensive systems using early weaning to increase sow productivity. They are small cages or pens with slatted floors arranged in tiers or decks. This system is not allowed in organic production. At weaning, piglets should be able to transi-

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	tion directly to housing with accommodates natural behaveiours (e.g., deep bedding, separate dunging areas and so on).
6.15.6 "Boars may be housed in individual enclosures provided there is visual and tactile contact with other pigs."	
6.15.7 "Indoor and outdoor exercise areas shall permit rooting."	6.15.7 For indoor areas or outdoor areas on concrete, there must be sufficient hay, straw or deep bedding to allow for rooting at any time of year. Similarly, organic production systems require the provision of ample hay or straw to allow for rooting when the ground is frozen.
6.15.8 "The use of nose rings is prohibited."	
6.15.9 "The minimum indoor and outdoor space requirements are shown in Table 7."*	6.15.9 These are minimums; more space, particularly outside, would be beneficial. The footnote allows for flexibility in exceptional circumstances. For example, maximum density may be increased if slaughter time is delayed due to regional flooding that leads to road closures or a pandemic causes an abattoir to shut down temporarily. If an operator needs to exceeds maximum density more than once, steps must be taken to prevent this happening in the future. For example, if road closures are common due to spring flooding or winter snowstorms, the operator must take this factor into consideration by ensuring that maximum density will not be exceeded even if the birds must be kept for longer than expected.

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