ANIMAL WELFARE ON ORGANIC FARMS

GUIDANCE FOR ORGANIC BEEF PRODUCTION

The ECOA Animal Welfare Task Force (AWTF) has reviewed the Canadian standards for organic production (CAN/CGSB 32.310-2006 Organic Production Systems General Principles and Management Standards) and provided additional guidance for the optimal welfare of beef cattle in the context of the standard. The information provided is based on best management practices outlined in various animal welfare standards and in published research on animal welfare and organic systems of production.

The numbering refers to the specific paragraph numbers in the 2008 amended version of CAN/CGSB 32-310-2006.

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6. LIVESTOCK PRODUCTION

6.4 **Livestock Feed**

6.4.1 & 6.4.2 require that the operator of an organic livestock operation provide livestock with an organic feed ration balanced to meet their nutritional requirements, and that the ration be made up of substances that are necessary and essential for maintaining the animals' health, well-being and vitality while meeting the physiological and behavioural needs of the species in question.

Guidance 6.4.1

Body condition should be regularly monitored to maintain health and productivity and to avoid welfare problems. Feeding can be adjusted for animals that are too thin or too fat. Aim for BCS 3.25-3.5 (on a 5 pt scale) at calving to prevent falling below 3 by weaning.

Guidance 6.4.2

Feed should contain sufficient fibre/roughage (at least 60% of DMI) to allow rumination and to prevent acidosis and reduce the risk of bloat and laminitis. (2,4,3)

Supplemental vitamins and minerals should be provided if soils and feed are known to be deficient. Vertical (sand) cracks in the hooves of pastured cattle have multiple causative factors, but may be a sign of vitamin or mineral deficiency. Overweight animals are more susceptible. (6)

Paragraph 6.4.3a requires that specific rations for young animals take into account the need for natural milk.

Guidance 6.4.3a
Intervention is not recommended unless absolutely necessary. If a beef calf is unable to suckle from its mother it should receive at least 2 litres of colostrum with 6 hours of birth.

Suckler stock should be weaned with as little stress as possible. Weaning at 6-10 months is recommended. [3]
Stress can be reduced and performance improved by using fence line contact where cows and calves maintain visual and auditory contact for no less than 4 days. [13] Another alternative is two-stage weaning by inserting an anti-sucking device for 4-7 days which allows calves to be weaned in the presence of their dams. This strategy reduces the traditional signs of weaning distress caused by abrupt separation. [6, 14]

Keep newly weaned stock in groups of familiar animals to avoid fighting.

Paragraph 6.4.5 requires that cattle be provided with clean fresh water on demand.

Guidance 6.4.5
Cattle require 32-45 L/head/day depending on weather.[6] (Or 1 gal/100lbs live weight per day).[2]
Water requirements are reduced in cold temperatures. Studies have shown that non-lactating pregnant females can receive adequate water from clean, soft snow when on winter pasture. [7]

When cattle are housed there should be enough water so at least 10% of cattle can drink at any one time. [3]

Recommended maximum distance cattle should travel to water: [19]
For steep slopes (>15%) rule of thumb is 1/4 to 1/2 mile (0.4-0.8 km)
For moderate slopes (8% to 15%) the rule of thumb is 3/8 to 3/4 mile (0.6-0.9km).
For flatter slopes (<8%) the rule of thumb is 3/4 to 1 mile (0.9-1.6 km)
See also guidance for 6.8.1b.

6.5 Breeding
The standard states that breeding methods must be consistent with the principles of organic production and it encourages the use of natural methods of reproduction while still permitting artificial insemination.

Recommended addition to the standard:
Electro- ejaculation must not be used as a method of sperm collection for organic bulls.

Guidance 6.5
Do not breed heifers with a bull or breed of bull which could result in calving difficulties. [3] Heifers should be at least 2/3 of mature body weight before they are bred. [4]

6.6 Transport and Handling

This section requires that animals be treated with care and respect and that stress, injury and suffering be minimized in all handling, transportation and slaughter of livestock.

Guidance
The Recommended Code of Practice for the transport of farm animals should be followed as a minimum standard. (www.livestockwelfare.com/codes)

Guidance 6.6.1
Handling pens should be the right size and scale for the type and number of animals in the herd. Facilities should be designed to promote movement of cattle without stress. Curved cattle chutes and crowd pens are more efficient because cattle a natural tendency to go back to where they came from. Recommended minimum length for a single race on a cattle ranch is 12.2 m; maximum is 23m. The ideal radius for a crowd pen is 12ft. [8]

Pens, races, restraining gates, and floors should be in good condition so as not to cause injury. Ramps should have incline of no more than 20%. Cattle prefer to move into the light, therefore loading areas should be well lit and shadows should be avoided.[2,3,8]

Cattle have a wide field of vision; an understanding of the flight zones (the animal's personal space) will assist in controlling the animal's movement. Cattle also have acute hearing and should not be subjected to loud noises. Yelling and whistling is likely to make nervous animals agitated. [3,6,8,]

Cattle should be moved at their own pace without being hurried. [3] Electric prods should not be used; sticks should be used to guide only and not to strike the animal. A stick with a small flag works well. [8] Rough handling is a source of stress for cattle of all ages.

To reduce fear and stress in grazing cattle when they need to be gathered or treated, young stock should come into regular contact with humans.[3]

Guidance 6.6.2
Cows should not be transported in the week before and after giving birth or if they are likely to give birth during transport. Calves should not be shipped until at least 7 days old. [4] Cows with calves should be shipped in a separate compartment within the transport carrier to avoid inadvertent injury of the calves by adult cattle.

Paragraph 6.6.4 requires that effort be made to transport animals directly from the farm to their final destination, but does not prohibit the practice.

Guidance 6.6.4
Sale yards and auctions should not be used.

In addition 6.6.5 requires the duration of transportation to be as short as possible.

Guidance 6.6.5
Duration should ideally be less than 8 hours with good ventilation provided regardless of distance travelled. If longer than 8 hours, there should be sufficient bedding and feed. Water must be provided at the end of the journey. Transit time should not exceed 24 hours unless animals are unloaded and given a 5-hour rest period with food and water provided. Calves which cannot be fed exclusively on hay or grain must not be transported for more than 18 hours without a rest period. (Health of Animals Regulation XII states that the rest period must be at least 5 hours, more if not all animals have had the opportunity to satisfy their feed and water requirements). [9, 10,11] Approved haulers should be used.

Paragraphs 6.6.6 requires that animals too ill to be transported be suitably euthanized, without cruelty.

Guidance 6.6.6
Euthanasia should be carried out by a trained competent person, licensed processor or veterinarian in order to produce a quick and painless death.[2] Penetrating captive bolt and gunshot are the only methods available to non veterinarians for emergency euthanasia. Gunshot should only be used when other methods not feasible. Manually applied blunt trauma to the head is not an appropriate method of euthanasia for cattle. [5]

6.7 Livestock Health Care

Guidance 6.7
Producers are encouraged to develop a Herd Health Plan to assist in the prevention of disease.

Paragraph 6.7.1 requires the operator to establish and maintain preventative health care practices including, amongst other things, the establishment of appropriate housing, pasture conditions and provision of space allowances to minimize crowding and the occurrence and spread of diseases and parasites. Conditions must allow for exercise, freedom of movement and reduction in stress.

Guidance 6.7.1 c & d
Loose – housed polled and horned animals should not be grouped together unless they are in an already existing social group.

Attention should be give to fly population control and protection from rodents and predators in barns and on range. Humane methods of pest control should be used.[4, 6]

See the AWTF fact sheet "Management of Pest Flies on Organic Farms"; and ATTRA's website for information on alternative fly control. http://attra.ncat.org/calendar/question.php/2008/02/25/p5024

6.7.1e requires prompt treatment for animals with detectable disease, lameness or injury.

Guidance 6.7.1e
Foot problems are rare in extensively raised beef cattle but can be a problem depending on pasture or pen conditions. Lameness should be less than 5% - a higher percentage indicates a problem. Locomotion scoring is useful to asses the status of the herd at any one time. The scoring system outlined in the AWTF fact sheet "Identifying Lameness in Dairy Cattle" provides useful guidance.

Regularly inspect feet and trim hooves when necessary – use trained personnel and suitable restraining facilities. [3]

Sick and injured animals should be cared for in a comfortable, dry hospital pen with an entrance wide enough to allow animal to be easily herded into the pen. [3]

6.7.2 allows physical alterations when absolutely necessary to improve the health, welfare or hygiene of animals, or for identification or safety reasons. Alterations must be done in a manner that minimizes pain, stress and suffering, with consideration given to the use of anesthetics, sedatives and non-steroid anti-inflammatory analgesics.

Guidance 6.7.2
Dehorning: Rather than dehorning animals it is recommended that polled blood lines be used where the polled gene is available in beef breeds. There is no research which indicates horned cattle are superior in any economic traits such as daily gain, carcass weight/quality, or weaning percentages. http://www.usask.ca/wcvm/herdmed/applied-ethology/articles/dehorn.html

Dehorning and disbudding are painful and stressful procedures; the pain can be reduced using a combination of local anesthetics, analgesics (ketoprofen) and sedatives. Disbudding of calves with caustic paste, analgesic and sedative is less traumatic than hot-iron dehorning with an anaesthetic (lidocaine). Adult cattle should not undergo dehorning procedures - horns should be removed before 3 months of age and preferably at 5 days. Dehorning older animals can lead to growth setbacks lasting more than 100 days. [6] When anesthetics are used allow time for the area to become numb.

If dehorning, do so at time when flies are not a problem and protect the wound from contamination from feed. [3]

Castration: Methods include 1) rubber ring which can be used only in the first 7 days of life 2) bloodless castration by crushing (burdizzo) and 3) surgical castration. Irrespective of age all 3 methods cause pain. Use of rubber rings shortly after birth cause the least acute pain but it is stressful for a much longer time than surgical or burdizzo castration. [2,3] Procedures are best performed at a young age and with the use of sedative, analgesic and anesthetic [11] . Low stress handling should be emphasized.

European nations prohibit castration of bull calves over 2 month of age. In North America equipment ads advocate delaying until approx 750lbs (115-120 days prior to slaughter) because of additional benefit in growth from endogenous testosterone but this does not consider pain caused to the animal and therefore it is not recommended. [1]

Ear tags: Properly restrain the animal when fitting tags; if done during the fly season take precautions to avoid animals being irritated. [3] Ear tags should be inserted carefully to avoid infection and further injury.

Branding: Cattle should not be branded; alternative methods of identification such as RFID tags should be used. If branding is necessary or required by law for identification then only one brand should be used. Hot iron branding is a painful procedure, freeze branding is also painful but less so. [6]

Proposed amendment to the standard: Spaying of female beef cattle is prohibited.

Paragraph 6.7.9 requires the operator to have comprehensive plan to minimize internal parasite problems in livestock.

Guidance
A plan is also needed to minimize problems with external parasites and flies. Heavy lice infestations can compromise welfare during the winter months. In summer months high levels of face flies and horn flies can reduce weaning weights in calves by decreasing milk production and performance. Research studies have shown economic losses when the biting horn fly population is greater than 200 flies per beef cow (or 100 per dairy cow). Face flies are a problem at 10 flies on the face. [17] Cleaning up breeding areas (e.g. undisturbed manure piles) may be helpful. Research at Cornell is investigating whether harrowing pastures is beneficial.

See the AWTF fact sheet "Management of Pest Flies on Organic Farms"

6.8 **Livestock Living Conditions**

Paragraph 6.8.1 requires the operator of an organic livestock operation to establish and maintain animal living-conditions that accommodate the health and natural behaviour of all animals. This includes access to the outdoors, shade, shelter, rotational pasture, exercise areas, fresh air and natural daylight suitable to the species, its stage of production, the climate and the environment.

Guidance 6.8.1a
Cattle tolerate low temperatures as long as they have ample feed. Shelter is needed in periods of intense cold and protection from the wind in cold wet weather. Windbreaks can be natural (trees) or artificial (fences or structures).[2] Cattle should have well drained lying areas where protection is afforded from adverse weather conditions. [3]

Shelter or natural shade from trees is important in summer to avoid heat stress [3] which can begin when temperatures rise above 24C. Black cattle are more prone to heat stress. [6] (Panting cattle indicates heat stress).

Fields, paddocks and buildings should free of debris, plastic or sharp metal which could lead to injuries or rip out ear tags. [3]

Wet muddy pens should be avoided because they increase susceptibility to disease such as footrot. [6]

Animals must also have access to fresh water and high-quality feed according to their needs.

Guidance 6.8.1b
Feed bunks and troughs should be designed to reduce competition. Providing more feeding space reduces aggressive interactions. [6]

For cattle housed in pens:
Finishing cattle need 20-30 cm/head for *ad libitum* feeding;
Limit-fed newly weaned calves need at least 48cm/head;
There should be at least 60cm of feeding space for mature cattle; [6]
Horned animals need 25% more space. [4]

Water troughs should be located and managed to avoid areas of deep mud. Mud must not be allowed to exceed ankle depth, (stress from mud reduces weight gain; muddy cattle have higher pathogen load). [2, 8] Troughs should be located on concrete or well drained suitable surfaces that will not injure feet or be moved often so cattle are not standing in muddy or fouled areas. Cattle should be readily able to access water when they are grazing[3] in order to prevent heat stress and increase forage utilization. Forage utilization is known to decline at 800-1000 feet from water. [12]

In addition, there must be sufficient space and freedom to lie down in full lateral recumbency, stand up, stretch their limbs and turn freely, and express normal patterns of behaviour. Space allowances must be appropriate for livestock health.

Guidance 6.8.1c
All the cattle in a pen should be able to lie down and rest comfortably at the same time. [4] Bull pens should be sited to allow sight, sound and odor of other cattle and general farm activity. They should include a bedded sleeping area and loafing areas.

Guidance 6.8.1d
Space allowances should take into account the presence or absence of horns. There should be temporary holding areas during calving season for first calf heifers or cows experiencing calving problems.[2]

Guidance
Abnormal behaviour patterns in beef cattle that may be indicative of environmental problems[2]:
1. Repeated rubbing in the absence of disease
2. Tongue rolling/aerophagia
3. Pica (licking/chewing solid objects)
4. Eating soil/sand/dirt

5. Navel sucking
6. Ear sucking
7. Urine drinking
8. Persistent bellowing
9. Excessive mounting

Guidance 6.8.1
No features of the housing should cause injury or distress. (2)

Guidance was obtained from the following documents:

1. Effects of Castration technique and Anesthesia on behaviour and Weight Gain in the feedlot. Technical Report, Joseph Stookey, 2001

2. Animal Care Standards – Beef Cattle, Humane Farm Animal Care 2004

3. Code of Recommendations for the welfare of Livestock Cattle 2003, Defra. UK.

4. BCSPCA Standards for the Raising and Handling of Beef Cattle. 2003

5. Practical Euthanasia of Cattle. Considerations for the Producer, Livestock Market Operator Livestock Transporter and Veterinarian, Animal Welfare Committee of the American Association of Bovine Practioneers.1999

6. Canadian Council on Animal Care (CCAC) 2009, CCAC guidelines on: the care and use of farm animals in research, teaching and testing Ottawa, ON. Will be available at www.ccac.ca/en/CCAC_Programs/Guidelines_Policies/GDLINES/Guidelis.htm.

7. Meeting Water Needs for Winter Grazing, Jack Kyle, OMFRA 2004

8. Temple Grandin. See www.grandin.com for a wealth of information including facilities design and video clips on how to move cattle quietly.

9. Farm Animal Transport in Canada. Summary of the BC SPCA's recommendations, Sept 2006

10. Recommended code of practice for the Care and Handling of Farm Animals – Beef. 1991

11. Recommended code of practice for the Care and handling of Farm Animals – Transportation (CARC 2001)

12. Managing Livestock Grazing Distribution, Eric M. Mousel, South Dakota State Univeersity Cooperative Extension service, *http://www.thebeefsite.com/articles/1084/managing-livestock-grazing-distribution*

13. Price, E.O., Harris, J.E., Borgwardt, R.E ., Sween, M.L. and Connor J.M (2003), Fenceline contact of beef calves with their dams at weaning reduces the negative effects of separation on behaviour and growth rate, J. Animal Sci. 81:116-121.

14. D.B. Haley, D.W. Bailey and J.M Stookey. The effects of weaning beef calves in two stages on their behaviour and growth rate, J. Animal Sci. 2005 83:2205-2214

15. Manson F. J & Leaver J.D. (1988). The influence of concentrate amount on locomotion and clinical lameness in dairy cattle .Animal Production 47:185-190

16. Sprecher, D.J., Hostetler,D.E., and Kaneene, J.B. (1997). A lameness scoring system that uses posture and gait to predict dairy cattle reproductive performance. Theriogenology 47,1179-1187.

17. Pasture fly control, Fay Benson, Cornell Cooperative Extension

18. "*The Welfare of Cattle*" by Jeffrey Rushen, Anne Marie De Passillé, Marina A.G. von Keyserlingk and Daniel M. Weary, Springer, 2008. A review and discussion of the research on the welfare of cattle.

19. NRCS extension office, San Antonio, TX and *Grass-fed Cattle: How to produce and market natural beef* by Julius Ruechel, Storey Publishing, USA, 2006