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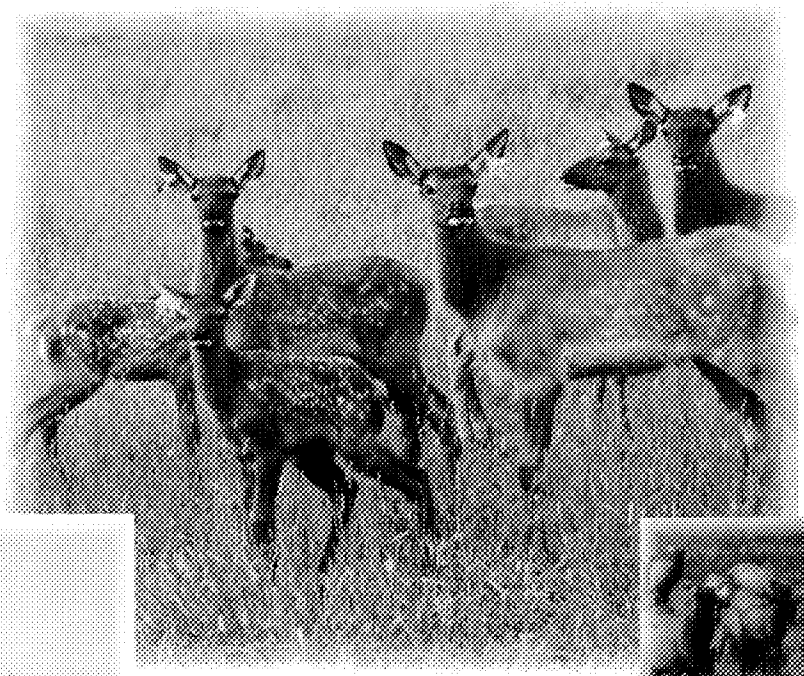
Recommended code of practice for
the care and handling of

Farmed Deer (Cervidae)



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Recommended code of practice for the care and handling of

Farmed Deer (Cervidae)

Coordinated by
Canadian Agri-Food Research Council (CARC)
CARC Canada Committee on Animals
CARC Expert Committee on Farm Animal Welfare and Behaviour
Canadian Federation of Humane Societies

Review committee
Participants are listed in Appendix 1

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Agriculture and Agri-Food Canada
Canadian Venison Council

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Acknowledgments

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Preface

The codes of practice are nationally developed guidelines for the care and handling of the different species of farm animals. The codes contain recommended housing and management practices for farm animals as well as transportation and processing.

The codes are voluntary and are intended as an educational tool in the promotion of sound husbandry and welfare practices. The codes contain recommendations to assist farmers and others in the agriculture and food sector to compare and improve their own management practices.

In 1980, the Canadian Federation of Humane Societies began coordinating the process of development of draft codes of practice for all livestock species with the introduction of a *Code of Practice for the Care and Handling of Chickens from Hatchery to Slaughterhouse*. The federal Minister of Agriculture provided financial support for the undertaking at that time.

All codes are presently developed by a Review Committee made up of representatives from farm groups, animal welfare groups, veterinarians, animal scientists, federal and provincial governments, related agricultural sectors and interested individuals.

In 1993, Agriculture and Agri-Food Canada asked the Canadian Agri-Food Research Council (CARC), its Canada Committee on Animals and Expert Committee on Farm Animal Welfare and Behaviour to take the lead in cooperation with the Canadian Federation of Humane Societies in updating existing codes and developing new commodity codes. CARC officially agreed to take on this responsibility in February 1995 upon confirmation of funding from Agriculture and Agri-Food Canada.

Codes developed to date:

Species	Original	Revision
Poultry	1983	1989
Pigs	1984	1993
Special fed veal calves	1988	-
Ranched mink	1988	-
Ranched fox	1989	-
Dairy cattle	1990	-
Beef cattle	1991	-
Sheep	1995	-

Further information on the process of code development can be obtained from the Canadian Agri-Food Research Council (CARC), 171 Slater Street, Room 701, Vanguard Building, Ottawa, Ontario K1P 5H7. Requests for copies of the codes can be addressed to the national commodity group and/or specific provincial organizations.

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Information contained in this publication is subject to periodic review in light of changing deer management practices, government requirements and regulations. No subscriber or reader should act on the basis of any such information without referring to applicable laws and regulations and/or without seeking appropriate professional advice. Although every effort has been made to ensure accuracy, the Review Committee shall not be held responsible for loss or damage caused by errors, omissions, misprints or misinterpretation of the contents hereof. Furthermore, the Review Committee expressly disclaims all and any liability to any person, whether the purchaser of this publication or not, in respect of anything done or omitted, by any such person in reliance on the contents of this publication.

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Section 1 ◊ Introduction

Deer, including wapiti (North American elk), have been raised commercially in Canada for over 25 years. Historically, this has been on a small scale. However, the industry has grown significantly in the last decade as farmers seek new economically viable and environmentally sustainable alternatives to traditional agriculture. Interest also has been shown by Indian and Métis communities seeking culturally consistent livelihoods for their people.

Species and numbers of farmed deer vary from province to province. Animals being farmed in Canada range from first generation wild-caught deer to animals that have been farm-raised for generations and imported from other countries. Currently, the most commercially significant species are wapiti, fallow deer and red deer. White-tailed deer, mule deer, reindeer and sika deer are raised in smaller numbers (Table 1).

Deer are farmed principally for the sale of live animals, venison (meat) and velvet antler. Deer are raised for a variety of purposes in a variety of production systems. Wapiti, red deer and fallow deer are currently considered most adaptable to farming in the Canadian environment. The needs of other species such as moose, mule deer and reindeer are more difficult to meet with current husbandry methods. This code focuses on husbandry of farmed deer. Recreational uses of deer are specifically excluded.

Deer are adapted behaviourally and physiologically to regional environments. Temperate and arctic species have strong annual cycles of reproduction and metabolism which are synchronized by photoperiod (day length). These adaptations allow deer to survive winter hardships and capitalize on the brief pulse of vegetation growth.

Common commercial species (wapiti, red deer and fallow deer) are gregarious mixed-feeders. Other species such as moose, white-tailed deer and mule deer tend to be less social and prefer foliage and twigs. These adaptations guide the deer farmer's selection of species, pastures facilities and husbandry systems.

The Canadian deer industry recognizes the need for a national code of practice which addresses issues of animal welfare in balance with normal farm management requirements. In the development of this code, consideration is given to: 1) physical and behavioural needs of farmed deer, 2) humane treatment, 3) human safety, 4) ease of animal management, and 5) farm profitability.

Following British codes, the following "five freedoms" are recognized as criteria for judging how welfare can be improved:

- freedom from hunger and thirst
- freedom from thermal and physical discomfort

- freedom from pain, injury and disease
- freedom from undue anxiety
- freedom to display most normal patterns of behaviour.

This code was initiated by the deer industry with a review of codes of practice and publications from a variety of Canadian and international sources (Appendix 6). Particularly influential were British and New Zealand deer codes, Ontario Deer Farmers' Association code of practice, and the British Columbia Fallow Deer Association's code for fallow deer production. Comments by government agricultural representatives, provincial associations of the industry, veterinary associations and individuals and groups with an interest in animal care and welfare issues were also considered in the formulation of this document.

The Canadian Federation of Humane Societies and Agriculture and Agri-Food Canada were approached by the Canadian Venison Council and a Review Committee was selected to provide further input and develop the code.

The process of conflict resolution was established at the outset. It was decided that this code should represent a consensus of participating organizations except where serious reservations are footnoted.

The strength of this code lies with all those who are committed to its promotion, application and future development.

TABLE 1: THE WORLD'S DEER COMPRISE ABOUT 40 SPECIES OF THE CERVIDAE FAMILY

	Common name	Scientific name	Male	Female	Young
Native deer	Wapiti (NA elk)	*Cervus elaphus* ssp	stag/bull	hind/cow	calf
	Moose	*Alces alces*	bull	cow	calf
	White-tailed deer	*Odocoileus virginianus*	buck	doe	fawn
	Mule deer	*Odocoileus hemionus*	buck	doe	fawn
Non-native deer	Red deer	*Cervus elaphus* ssp	stag	hind	calf
	Fallow deer	*Dama dama*	buck	doe	fawn
	Reindeer	*Rangifer tarandus*	bull	cow	calf

Section 2 ◊ Producers

2.1 **Application of this code**

2.1.1 The recommendations of this code of practice establish criteria promoting high standards of animal care and welfare. This code supplements government legislation which, among other things, licenses farms, establishes species which can be farmed, sets containment and facility standards, tagging and reporting requirements, transport, import and export, disease control, slaughter, access to water bodies, and stocking densities.

2.1.2 The Canadian deer industry recognizes that this is an evolving document which must respond to changing technologies, scientific discoveries, and cumulative industry experience.

2.2 **Producers' skills and responsibilities**

2.2.1 Persons working with deer must understand and accept responsibility for the welfare of deer under their care. Employers have an obligation to train employees properly on humane handling, equipment use, and livestock care and to ensure that employees follow those principles at all times.

2.2.2 Prior to assignment of duties, personnel must be adequately instructed on the basic seasonal needs of deer under their care according to species, gender and age. A working knowledge of the behaviour of deer combined with adequate facilities are necessary to ensure safe handling. Procedures must be reviewed and practised to ensure competency and safety.

2.2.3 Signs of poor health may be subtle. Personnel must be able to recognize behavioural signs that indicate discomfort or disease and respond quickly to the need to consult a veterinarian.

2.2.4 Producers must ensure adequate handling facilities and fences (Section 3).

2.3 **Cruelty and neglect**

2.3.1 It is unacceptable for any person to:

- mistreat any animal under his/her care and attention
- neglect any animal so that it experiences pain, suffering or distress
- fail to supply any animal with adequate resources to maintain the live weight of the animal within the normal physiologic range for the species type, age, and gender relative to the time of year
- remove velvet antler without adequate analgesia
- slaughter, confine, handle or transport any animal in a manner causing avoidable pain, suffering or distress
- keep alive any animal which is in pronounced physical or psychological discomfort unless it is under the direct care of a licensed veterinarian.

2.3.2 If deer are neglected, deprived of the basic necessities or subjected to cruelty or abuse, persons, particularly those in the deer industry, are responsible for reporting such situations to the proper authorities.

2.3.3 Ignorance is no excuse for inflicting hardships on animals. Charges of animal abuse can be laid under the *Criminal Code of Canada* or provincial statutes.

2.4 **Identification and records**

2.4.1 Health and production records should be maintained. Each animal should have an easily read and unique identification number. Tagging and inventory regulations are enforced by many provinces and/or associations.

2.4.2 Useful records include: pedigree, acquisition/disposition, birth date, weaning date and weight, date and nature of any treatment or medication, breeding history, and velvet records.

2.4.3 Permanent identification is needed for legal proof of ownership.

2.4.4 The industry encourages development of painless means of identification.

Section 3 ◊ Animal considerations

3.1 **Water and feed**

3.1.1 Deer are typically raised outdoors on native or seeded pastures.

3.1.2 Deer must have access to an adequate and clean source of water. These sources can be supplied as well water, natural streams and ponds or snow in extensive grazing systems.

3.1.3 Daily energy requirements vary significantly by species, age, gender, season, reproductive status and environmental conditions.

3.1.4 Where environmental, seasonal, or stocking density effects do not allow daily feed requirements to be met from range or pasture, supplemental feed must be offered.

3.1.5 Feeds used for conventional ruminant livestock are generally suitable for red deer, wapiti and fallow deer. Moose, reindeer, white-tailed and mule deer may require specialized diets. Specific trace mineral requirements can be met with supplements. Deer may have different requirements for minerals such as copper, selenium or cobalt than those of sheep and cattle.

These requirements may differ among deer species.

3.1.6 Deer decrease food intake and metabolic activity during winter and should be in good condition before winter. Good quality balanced rations (grains, pellets or stored forage) should be provided during the winter. As intake declines, demands for high-energy feeds increase. On the other hand, there are dangers of overfeeding which include dystocia (birth difficulties).

3.1.7 Feed requirements in relation to pasture supply vary seasonally and are higher for growing animals, lactating females and males in the late winter and early spring.

3.1.8 In group feeding, it is important to ensure that all animals (with special attention to subordinate individuals) obtain adequate amounts of feed.

3.1.9 Changes in diet must be made gradually to prevent digestive problems or potential death.

3.1.10 Feeds must be free of spoilage. Unusual feedstuffs should be offered only when research has shown no adverse effect on animal health or the safety of the final product.

3.1.11 Feeds must be stored in an appropriate manner to reduce growth of molds and contamination from rodents, birds and insects. Feed quality, particularly vitamin activity, will deteriorate during storage. Manufacturers' expiration dates must be respected.

3.1.12 When feeding baled forage, twine and wrap must be removed to avoid illness or death from ingestion or injury from entanglement.

3.2 Pastures

3.2.1 Animals on pasture must have access to a sufficient quantity and quality of feed and water. Required salt and minerals should be available.

3.2.2 Stocking densities are determined by rainfall, soil fertility, composition of vegetation and grazing pressure. Stocking density should be adjusted so deer maintain good body condition.

3.2.3 Animals on pasture should have access to natural or artificial shelters against adverse weather conditions.

3.2.4 Although deer farming is generally envisaged as low-input livestock production, agricultural chemicals are sometimes utilized. Fertilizer, pesticide and herbicide applications must be timed to prevent risk to grazing animals or consumers of animal products.

3.2.5 Pastures should be monitored for poisonous plants and water sources for bluegreen algae, other toxins and disease organisms. Personnel should contact the appropriate provincial agency to become familiar with the poisonous plants and water quality issues in the area.

3.2.6 Deer must not have access to dangerous materials such as lead batteries, wire, staples, petroleum products, or lead-based paints.

3.2.7 Rotational grazing is encouraged to maintain pasture productivity and control parasites.

3.2.8 Fawning/calving paddocks should be clean, well-drained and away from disturbances. Hiding cover provides shade and keeps fawns/calves away from fencelines.

3.3 Handling

3.3.1 General

3.3.1.1 Deer should be handled quietly with care and patience. Familiarization of deer with handling facilities and management routine from an early age reduces apprehension.

3.3.1.2 As with all livestock, intensively farmed deer should be inspected by an experienced stock person on a daily basis. New arrivals should be left in their new surroundings for a few days with minimal disturbance and integrated into the existing herd structure with care. In extensive situations, benefits of surveillance need to be weighed against the consequences of disturbance.

3.3.1.3 Deer often are more calm when handled under reduced lighting and in covered sheds.

3.3.1.4 Large groups of deer should be broken into smaller groups of 10 to 15 or less for handling on entering the yards.

3.3.1.5 Deer should be handled by a minimum number of people. Unusual noises should be discouraged.

3.3.1.6 Once groups have been established, changes in composition should be minimized. If possible, new animals should be added in groups rather than singly.

3.3.1.7 Many issues are related to use of dogs to control deer. Deer that are unfamiliar with dogs may stampede into fences. Wapiti and even red deer can be dangerous to dogs. Although dogs may protect smaller deer such as fallow deer from predation, habituation of deer may reduce their natural wariness and aggressiveness against predators. If used, a dog must be well trained and experienced with deer and under strict control.

3.3.1.8 Although animals may be available from the wild, producers must be aware that the transition to captivity is stressful, particularly for adult animals. Animals sourced from the wild may remain particularly susceptible to injuries and diseases for several years.

3.3.2 Handling males

3.3.2.1 During the rut, males may be dangerous and must be treated with respect. Hand-reared animals are particularly dangerous, due to their lack of fear.

3.3.2.2 Antlers should be removed to: 1) avoid risk of injury to themselves and other deer and people, 2) reduce damage to facilities, and 3) allow easy access to feeding facilities and watering systems.

3.3.2.3 Antlered and antlerless males should be separated, especially during the rut.

3.4 Restraint

3.4.1 Restraint is required for procedures such as tagging, velveting, hoof trimming, and removing porcupine quills and other interventions.

3.4.2 Mechanical restraint normally is preferred. Restraining devices such as bales, crushes, and cradles must be designed and sized specifically for each species. This specialized equipment must be regularly maintained and repaired and personnel must be skilled in its operation.

3.4.3 Use of currently available chemical immobilizing agents is legally restricted to licensed veterinarians and other authorized persons.

3.4.4 Chemical immobilization should not be used where deer might injure or disorient themselves or become separated from human care, for example near open water, extensive woodland or steep slopes. Following chemical immobilization, animals should be kept upright in a dry flat area and kept under observation until sufficient recovery has occurred to avoid risks of bloat, regurgitation or accidental injury. Animals recovering from chemical immobilization behave strangely and may be attacked by other animals.

3.4.5. Electro-immobilization (EI) is an effective method of restraint but does not control pain and can be disagreeable, particularly if used repeatedly. Therefore, EI cannot be recommended until scientifically demonstrated to be superior to alternative methods of restraint.[1]

[1] The Canadian Veterinary Medical Association and the Canadian Federation of Humane Societies find the use of EI unacceptable.

Electro-immobilization

Electro-immobilization (EI) involves passing a pulsed, low-voltage electrical current through the body. This puts the skeletal muscles into spasm and renders the animal incapable of moving. The procedure is distinct from electro-acupuncture which involves a gradual desensitization of a local area of the body by electric current, and electro-anaesthesia which involves inducing anaesthesia by applying electrical current to the brain.

EI is not a form of anaesthetic or analgesic. Electro-encephalograms and other evidence show that animals undergoing EI are fully conscious and sensitive to pain. With cattle and sheep, painful procedures performed under EI are more aversive than the painful procedures by themselves, suggesting that EI makes such treatments more disagreeable rather than less. EI also leads to increased heart rate, secretion of stress hormones such as cortisol, and impairs breathing. In some cases, however, EI reduces handling time because the immediate, reversible paralysis allows procedures to be completed more quickly than mechanical restraint.

Natural Mating Systems

Wapiti, red deer and fallow deer use a harem mating system in which dominant males control groups of several to over 20 females. In some situations, fallow deer may use a lek system in which males compete on a central display arena. In the wild, moose, white-tailed deer and mule deer males rove widely during the rut, tending and breeding females in sequence.

3.5 Breeding

3.5.1 Disturbance of breeding groups during the rut should be minimized.

3.5.2 Single-sire mating is used to reduce competition and to trace pedigrees. Where multi-sire mating is practiced adequate space is essential to minimize confrontation.

3.5.3 Males of larger subspecies and hybrids should not be bred to females which are significantly smaller and which have not successfully reared at least one offspring.

3.5.4 When artificial insemination is practiced, proper restraining devices should be available to facilitate easy and effective insemination. Estrous synchronization, embryo transplantation and intra-uterine insemination are recognized in some provincial veterinary acts as veterinary procedures and, in that case, should be performed by licensed veterinarians (Section 3.9).

3.5.5 Females should be fed so that they are in optimal body condition just before breeding. Dietary demands are generally low during early pregnancy but increase significantly in the last stages of gestation and almost double during lactation.

3.5.6 To minimize birth difficulties (dystocia), females should not be overweight or underweight at the time of parturition. Regular exercise seems to reduce calving problems.

3.6 Delivery and neonatal care

3.6.1 Pregnant animals should be familiarized with their birthing areas several weeks prior to delivery. Pastures should be well supplied with quality forage, water and shelter from intense sunlight and inclement weather. Birthing areas should be away from potential disturbances but close to facilities. Unobtrusive surveillance should be made several times daily by a familiar individual.

3.6.2 Although birth difficulties are uncommon, females having difficulty during birth should be assisted by competent personnel using accepted veterinary techniques.

3.6.3 A dam that has been assisted or disturbed during birth may abandon her newborn. A contingency plan for artificial rearing must be in place.

3.6.4 Newborns must consume colostrum (dairy or artificial substitutes) within 12 hours to obtain nutrients and antibodies which are critical for survival. Hand-reared young should have access to palatable feed, fresh roughage and clean fresh water. They should be inspected at each feeding for signs of diarrhea, constipation and coughing.

3.6.5 Although vehicles may be used for safety when tagging young or assisting females, noisy machinery generally should not be operated in or near birthing paddocks.

3.7 Weaning

3.7.1 In wild deer, there is a gradual weakening of the maternal bond during the rut with a final break before the next birth season. Milk plays a minor nutritional role after 100 days lactation in most deer species.

3.7.2 Weaning can occur before or after the breeding season (>100 days). Late-born offspring should not be weaned within 45 days of birth.

3.7.3 Where weaning is practiced the preferred method is to leave offspring on their home pasture and remove 15-20% of the dams each day over a one-week period (interval weaning). Typically, supplementation of females is suspended to assist drying-up.

3.7.4 Weaned animals must have access to good quality roughage or commercial diet. Fresh water should be available. Daily monitoring is required.

3.8 Herd health care

3.8.1 Animals and facilities should be inspected regularly.

3.8.2 A comprehensive herd-health program should be developed in consultation with a veterinarian.

3.8.3 Injured and sick animals should be treated promptly, or if untreatable, humanely destroyed (Appendix 2). Note that individuals of gregarious species can be stressed when isolated.

3.8.4 Dead animals must be immediately and appropriately disposed of according to municipal, provincial and federal regulations. Post mortem examinations should be performed on all mortalities as a means of monitoring the health of the herd.

3.8.5 Any occurrence of a reportable disease (Appendix 3) as defined by the *Health of Animals Act*, or suspicion of such disease must be reported immediately to a veterinarian. In the case of positive diagnosis, the manager, handler or owner must immediately introduce measures specified under the *Health of Animals Act*.

3.9 Surgical procedures and medication

3.9.1 Few of the commonly used medications are licensed for deer.

3.9.2 Medical records must be properly maintained and withdrawal times (generally documented only for cattle and sheep) strictly observed or exceeded.

3.9.3 Surgical procedures must be conducted only by licensed veterinarians. Provincial veterinary acts may specify certain minor surgery that may be performed by non-veterinarians.

3.10 Castration and vasectomy

3.10.1 Castration is seldom conducted and is not generally recommended because it disrupts natural cycles, and slows lean growth. However, specialized fallow deer operations may benefit from serving off-season venison markets with castrates. Vasectomy may be required for red deer males to prevent genetic changes in wild populations of wapiti should escapes occur. Vasectomy has no effect on the antler cycle.

3.10.2 When practiced, surgical castration should be done within several days of birth.

3.11 Antler management

3.11.1 In hard antler, stags frequently damage fences and facilities, risk injury to themselves, and are a threat to staff. Hard antler should be removed before the rut for the protection of other animals and handlers. Anaesthetic is not required but animals must be properly restrained. Care must be taken to use a sharp sawing instrument and to remove the antlers without damaging the pedicle.

3.11.2 Disbudding of calves/fawns by an experienced veterinarian can permanently suppress antler growth.

3.11.3 Velvet antlers are removed mainly from red deer, wapiti, sika and reindeer. When a decision is taken to remove velvet antler, care must be taken to minimize stress and to ensure that the highest possible standards of animal care and welfare are maintained. [2, 3]

3.11.4 Specifically:

- velveting must proceed under veterinary supervision
- to minimize stress and to avoid damage to the velvet antler, velveting should not be attempted during periods of extreme temperature

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[2] The Canadian Federation of Humane Societies (CFHS) believes that the practice of velvet antler removal is ethically wrong and further believes that the techniques used have not yet been universally perfected or applied to prevent unnecessary stress to the animal. Accordingly, CFHS does not accept velvet antler removal except for veterinary medical purposes.

[3] The Review Committee recognizes that velvet removal is an integral practice for some sectors of the farmed deer industry. In recognizing this fact, the Review Committee wishes to have the procedure conducted in the most humane manner possible.

- effective methods of restraint must be used. Animals should be blindfolded to minimize stress. Where chemical immobilants are used, a blindfold prevents random visual stimulation and protects the eye surface from dehydration and abrasion

- pain must be controlled. A ring-block around the base of the pedicle is preferable to a regional nerve block. At least five minutes must be allowed for nerve block induction before proceeding

- bleeding should be controlled by the correct use of tourniquets or hemostatic products

- antlers must not be cut less than 2 centimeter above the coronet of the pedicle.

3.11.5 A national velveting training program is recommended to achieve a consensus on humane standards and to ensure that veterinarians and deer farmers are familiar with modern humane methods of velvet removal.

3.11.6 Velveted stags must be offered unrestricted access to shade, shelter and fresh water. Animals should be monitored for signs of infection or fly-strike.

3.11.7 If animals exhibit abnormal signs after the normal recovery period, a veterinarian should be consulted.

Antler Development and Use

Antlers are bony appendages which grow and are shed annually from the pedicle formation of the frontal bone. Velvet antler is growing pre-calcified tissue with an abundant blood and nerve supply and a covering of fine hair. Hard antlers are shed annually just before new velvet antlers begin to develop from the pedicle.

Velvet antler is a valued product in traditional oriental medicine and now a health food supplement on the North American market. It is a commercially significant product of farming several species of deer.

3.12 **Auctions**

3.12.1 Video, satellite or on-farm auctions are encouraged because they minimize transport and handling.

3.12.2 Where live auctions are conducted, handling and display facilities should be designed to safely accommodate the animals being sold and should be staffed by trained personnel.

3.13 **On-farm slaughter**

3.13.1 Development of on-farm slaughter using mobile facilities avoids the stress of transport and is encouraged.

3.13.2 A mobile slaughterhouse should be operated in accordance with the principles outlined for permanent facilities (Section 5).

3.13.3 Other slaughter for personal consumption must be carried out in a humane manner (preferably killed with firearms, Appendix 2) by an individual competent to do so. An animal must not be suspended, or incised in any way, until it has first been shot or otherwise rendered unconscious, except where the individual is qualified to carry out religious slaughter.

Section 4 ◊ Farm facilities

4.1 **Housing and shelter**

4.1.1 Deer should have access to natural or constructed shelter areas which provide protection from weather extremes.

4.1.2 Shelters should be located to avoid adverse natural occurrences such as seasonal flooding. Building materials including preservatives and paints to which the deer have access should not contain any chemical compounds harmful to the deer or which may contaminate the products destined for human consumption.

4.1.3 Electrical installations should be inaccessible to deer and must follow provincial codes.

4.1.4 Enclosed buildings should be provided with adequate ventilation while avoiding drafts.

4.1.5 There should be sufficient access to feed and water to avoid competition. Deer within groups should be free to stand and lie down comfortably at the same time. Floors of barns and handling alleys should always provide good traction and be kept clean and dry.

4.1.6 Handling alleys and housing pens must be free of sharp edges and protrusions to prevent injury to animals and personnel.

4.1.7 Shelter should be available if necessary to separate and protect injured, orphaned or sick animals.

4.2 **Fencing**

4.2.1 Fences must be properly designed and well maintained. Fences should be checked after snow and wind storms.

4.2.2 Perimeter fences should prevent escapes and discourage movement of wild deer or predators onto the farm.

4.2.3 Appropriate fencing materials and construction techniques that minimize the potential for injury should be used. Barbed wire must not be used except to discourage predators. For this purpose it should be secured on the outside of the perimeter fence posts or used as a base wire in netting fence construction of the perimeter fence. Fencing wire for perimeter fences should be attached on the inside of the perimeter fence posts.

4.2.4 Electric fencing is suitable only for internal fences.

4.3 **Raceways**

4.3.1 Raceways connecting pastures and handling facilities should allow easy herd movement, prevent injury and minimize stress.

4.3.2 Raceways should be constructed with posts on the outside of the fence wire. Shade netting, solid fencing or some other visual barrier is essential at pressure points and at the entrance to the handling facilities.

4.3.3 Gates should be designed to prevent animals from getting under them and lifting them off their hinges. Where used, wire should be attached against the inside of the gate rather than the outside. Perimeter gates should be kept free from stock movement and pressure if possible.

4.3.4 To prevent escapes, double perimeter gates are recommended, particularly at major access points. Gates should be locked to prevent vandalism and theft.

4.4 **Handling facilities**

4.4.1 Deer farms must have adequate handling facilities which allow safe and easy handling of deer.

4.4.2 Walls, ceilings, gateways and doors must be free of sharp edges, projections or gaps which may cause injury to deer.

4.4.3 Floors of handling facilities should be free draining, provide good traction, and be kept as clean and dry as possible in order to eliminate injuries, discomfort or health risks to the animals.

4.4.4 Surfaces of handling facilities should enable easy cleaning and disinfection.

4.5 **Predator management**

4.5.1 Producers should consult local conservation officers to identify potential predators specific in the area and to plan remedial measures.

4.5.2 Barbed wire or electric wire outside the perimeter fence, 15 centimeters or less from the ground or at the top of the fence, discourages predators from digging under or climbing the fence.

4.5.3 The bottom 0.6 meters of a mesh fence should have spacings sufficient to prevent the entry of potential predators.

Section 5 ◊ Transportation

5.1 **General**

5.1.1 In any new situation or location, normal healthy deer are alert and investigative but may hesitate to move in new surroundings. Abrupt movements, noises or flashes of light should be avoided (Section 3.3).

5.1.2 Persons handling or transporting deer should be properly instructed and knowledgeable about deer behaviour and welfare, and must comply with regulations of the *Health of Animals Act* (Appendix 4).

5.1.3 Shippers are responsible for hiring qualified transporters. Transporters should not be hired unless they: 1) have demonstrated responsibility in the handling of deer, and 2) use properly equipped vehicles.

5.1.4 The driver is responsible for the care and welfare of the deer during vehicle operation, and during loading and unloading. Employers are responsible for ensuring that drivers are adequately trained and knowledgeable of the care and handling of deer.

5.1.5 Each load should be checked within the first 20 minutes after loading and every 4 hours thereafter.

5.1.6 The transportation of deer from point of origin to final destination should be by the most direct and appropriate route and should be completed without delay.

5.1.7 The driver should start, drive and stop the vehicle as smoothly as possible, and should avoid sharp turns.

5.2 Long distance translocation

In the interest of animal welfare and to ensure maintenance of lactation with seasonal changes, pregnant deer should not be transferred between the Northern and Southern Hemispheres.

5.3 Pregnant, unfit and stressed animals

5.3.1 Prior to transport, animals should be in good physical condition and health. Deer that are sick, injured, disabled, fatigued or that cannot be moved without causing them avoidable suffering are unfit for transportation.

5.3.2 Except in emergencies, the following deer must not be transported:

- deer that are unfit
- pregnant deer 1) within 14 days of giving birth, or 2) within 30 days of giving birth, if the duration of the trip will exceed 6 hours
- deer with young at foot under 4 weeks of age (young can be transported separately from does for short trips)
- pre-rut weaned animals within 2 weeks of separation from their dams
- deer in velvet, with bleeding or incompletely healed pedicles, or within the first 48 hours after velveting.

5.3.3 An animal that becomes injured, sick or disabled during transit must be taken to the nearest appropriate place for treatment and kept separate from other animals. In the case of an accident, immediate action should be taken to minimize suffering. Veterinary advice should be sought. Animal welfare must take precedence over economic considerations.

5.3.4 Care and common sense are essential when forced movement of a stressed animal is necessary. Each animal should be treated with extreme patience and should be allowed to rest when necessary to avoid exertion.

5.4 Loading and unloading

5.4.1 Deer should be loaded and unloaded in a way to prevent injury or suffering. Properly designed and maintained loading facilities should be provided for easy and safe movement of deer.

5.4.2 Ramps and chutes should be strong, have solid walls and provide secure footing. Good, uniform lighting allows for easy movement of animals. No gap should exist between the ramp, its side and the vehicle. The ramp walls should be high enough to prevent deer from jumping over.

5.4.3 Ramps must be free from projections and sharp edges.

5.4.4 Vehicle doors and internal gates should be sufficiently wide to permit deer to pass through readily, without bruising or injury.

5.5 Vehicles and containers

5.5.1 Definitions:

- vehicle - any means of conveyance used for the transportation of deer, including trucks, tractor-trailers, railway cars, ferries, ships and aircraft.
- container - a box or crate that is constructed for the shipment of livestock and that can be moved independently from one mode of transportation to another.

5.5.2 Vehicles used to transport deer should permit easy loading and unloading and provide for the safety of deer and personnel during transport.

5.5.3 Deer should be loaded only into vehicles that are clean and sanitized.

5.5.4 Vehicles or containers used to transport deer must be fully enclosed with sides, floors and ceilings that are strong and secure and free from projections or sharp edges.

5.5.5 Floors should provide secure footing. It is recommended that sand, saw-dust or straw be used over non-slip flooring material. Provision must be made for drainage and absorption of urine and feces.

5.5.6 The vehicle must be constructed to ensure that no part of an animal can project from the vehicle.

5.5.7 Vehicles must have doors which close firmly and securely, with a tamper-proof locking system.

5.5.8 Vehicles must be constructed to provide deer with adequate ventilation at all times, while avoiding drafts. Care must be taken to prevent entry of the exhaust from the vehicle into the area containing the deer.

5.5.9 Vehicles and containers should be cleaned and disinfected after each shipment.

5.5.10 The vehicle used to transport deer should be in excellent condition and must be in full compliance with provincial highway traffic legislation.

5.5.11 There should be no gap between internal gates and walls or between gates and floor which might allow a deer to become jammed under the gate.

5.5.12 Containers should be suitably designed, constructed and labeled with full details including species, and should have clear instructions for feeding and management. Containers must be secured to vehicles to prevent movement during transit. Containers that hold deer should be tilted as little as possible during all stages of loading and unloading.

5.5.13 Transportation of deer by air must also be in compliance with existing *International Air Transport Association (IATA) Live Animals Regulations*. Copies can be obtained from: Publications Assistant, IATA, 2000 Peel Street, Montreal, Quebec, H3A 2R4.

5.6 Space requirements

5.6.1 Deer must be provided with sufficient floor space in a vehicle or container to ensure that they are not crowded in a way that is likely to subject them to injury or suffering.

5.6.2 Each animal should be able to stand in its natural position, allowing for comfortable head movements without touching the deck or roof of the vehicle or container. All deer should be able to lie down comfortably at the same time.

5.6.3 As a guide to achieving 5.6.2, calculate length x width of the space occupied by each animal when lying down, then divide the loadable surface area of the truck or container by that figure to calculate the number of animals to be loaded. Reduce that number somewhat on longer trips or in hot weather.

5.7 Segregation

5.7.1 Deer should be segregated according to species, size, gender, age, social group and/or compatibility.

5.7.2 A male in rut or with hard antlers must be segregated from all other animals. Males with velvet antlers should not normally be transported.

5.7.3 When the vehicle is not full, deer should be securely partitioned in smaller areas to provide stability for the deer and the vehicle. The size of any group should not exceed 15 individuals (Section 3.3.1.4).

5.8 Food, water and rest

5.8.1 Deer should be fed and watered before loading for transport.

5.8.2 Where transport time will exceed 24 hours, carriers should transport deer in vehicles that are equipped to provide adequate resting space, water and hay. Water can be provided by hosing down the animals and wetting their hay at 4-hour intervals during transport. This technique will also cool the deer in hot weather.

5.9 Precautions in extreme weather

5.9.1 Deer must be protected from cold winds during transport. Special care should be taken with offspring less than 4 weeks old by providing clean, dry bedding.

5.9.2 When the ambient temperature exceeds 30° C, deer should not be transported unless special provisions are made for cooling the deer (e.g., regular hosing down, air conditioning or ice positioned where air flow cools the container). Handling should be kept to a minimum and loading density should be reduced. Adequate air-flow which is exhaust free should be provided at all times to keep the deer comfortable.

5.9.3 During hot and humid periods, the transporter should attempt to schedule transport at night and in the early dawn. The driver should plan the route to avoid traffic congestion, and to minimize the time that the vehicle is stationary. Vehicles should not be parked in direct sunlight.

5.9.4 In the event of unforeseen delays, prescribed emergency procedures should be followed (Appendix 5). In addition, the shipper or consignee should be contacted. The owner is responsible for determining potential emergency off-loading sites and assistance.

Section 6 ◊ Slaughter

6.1 General

6.1.1 Operators of all slaughtering facilities are fully responsible for humane handling of deer on their premises.

6.1.2 It is the responsibility of inspectors under both federal and provincial legislation to monitor the humane handling of deer.

6.1.3 Inhumane handling and treatment such as overcrowding, careless exposure to inclement weather, or other circumstances that result in unnecessary suffering, should be reported immediately to both plant management and inspection authorities.

6.1.4 Opportunities for on-farm slaughter should be explored (Section 3.13).

6.2 Unloading

6.2.1 Unloading areas should be maintained in a sanitary condition.

6.2.2 Unloading facilities must provide secure footing and not cause injury to animals.

6.2.3 Vehicles and docks must always be aligned. To accommodate vehicles of varying heights, provide unloading docks of different heights or adjustable ramps. There must be no unprotected gaps between the vehicle and the platform (bottom and sides).

6.2.4 It is preferable to have a flat landing surface at ramp or dock level.

6.2.5 Unloading should take place as soon as possible after arrival of the transportation vehicle. The packer, the trucker, and the producer should consult to prevent unnecessary delays.

6.2.6 Deer may balk at contrasting shadows, bright spots, and changes in floor surface. Receiving areas should have adequate and uniform lighting.

6.2.7 The preferred means of handling "downers" (animals unable to move even with assistance) is to shoot/stun them on the vehicle, remove them from the vehicle, and bleed them prior to regaining consciousness. Otherwise, downers may be immediately off-loaded by means of a stretcher, cage, or similar equipment, if properly constructed and if the design of vehicle and size of the animal permit them to be moved without causing undue pain or suffering.

6.2.8 The dragging of conscious animals is not permitted.

6.3 Handling

6.3.1 Deer should be moved through facilities patiently and as quietly as possible to reduce stress and risk of injury and to make the job safer and more efficient. Sufficient time should be allowed to keep pace with plant requirements without having to put pressure on either the deer or their handlers.

6.3.2 Deer are affected by contrasts between light and dark areas; therefore care should be taken to ensure that artificial or natural light does not cast shadows across the path of animals. The presence of a floor drain also causes a contrast and it is recommended that in new or renovated facilities, floor drains be located in such a way as to minimize the need for animals to cross them.

6.3.3 Sticks, canes or electric prods must never be used on deer. However, a staff may be used for safety when handling larger or aggressive deer.

6.3.4 Deer should be segregated from other species of food animals. Every animal that is a potential danger to other deer should immediately be segregated.

6.4 Alleys and chutes

6.4.1 All floors of alleys and chutes should be hard-surfaced, properly drained and scored or treated to prevent animals from slipping; floors must be graded gently to provide good footing.

6.4.2 Deer feel trapped and will balk if they see a dead end. Deer should be able to see one pathway of escape ahead.

6.4.3 The provision of solid sides for chutes and ramps is helpful.

6.4.4 All ramps and chutes should have high enough sides to prevent animals from escaping, falling, or jumping off.

6.4.5 Protruding objects, such as nails and bolts, that might cause injury must be avoided.

6.5 Holding facilities

6.5.1 Sufficient pens should be provided to prevent overcrowding, to permit necessary segregation of animals, and to enable all animals to lie down.

6.5.2 Floors of pens should be hard-surfaced, properly drained, scored or treated to prevent slipping, and graded gently to provide good footing. The slope of the floor in individual holding units should be between 2% and 4% (2-4 cm/m). Drainage grates, where present, should be at the side of the pens.

6.5.3 Holding facilities should protect deer adequately from the elements.

6.5.4 Every holding area should be adequately ventilated to minimize distress to the animals and excessive accumulation of odours and condensation.

6.5.5 Holding pens should provide animals with access to clean water. Water heaters should be provided to prevent drinking water from freezing.

6.5.6 Deer held for more than 24 hours should be provided with adequate feed in a bedded area that has sufficient room to allow all animals to lie down at the same time and in which the feed cannot become contaminated.

6.6 **Special handling of injured, sick and disabled deer**

6.6.1 Deer that are sick, injured, or disabled should immediately be separated from healthy animals.

6.6.2 Equipment should be provided for the conveyance of non-ambulatory animals within the plant without dragging or causing undue suffering.

6.6.3 Priority must be given to the slaughter of injured or disabled deer.

6.7 **Stunning and slaughter**

6.7.1 The selection and training of personnel are the most important factors in ensuring that slaughter is humane.

6.7.2 No deer shall be slaughtered without first being rendered unconscious by an experienced person using an approved, humane method with the exception immediately following:

6.7.3 Animals that are slaughtered in accordance with established religious laws, without stunning, should be properly restrained and the slaughter must be carried out by qualified, experienced persons.

6.7.4 Hoisting of conscious deer is not permitted.

6.7.5 Stunning pens should be designed and constructed to permit easy, safe and reliable stunning.

6.7.6 It is essential that stunning equipment be well maintained and used only by trained operators. The procedure should render the animal unconscious immediately.

Section 7 ◊ Research

7.1.1 Because of the brief history of deer farming in Canada and the distinctive requirements of each species, recommendations of this code will continue to evolve.

7.1.2 The Canadian deer industry recognizes the importance of research on issues related to the welfare of farmed deer.

7.1.3 Priorities for research relevant to this code include:

- assessment and amelioration of handling/ transport stress
- improved methods of restraint and analgesia
- evaluation of humane removal of velvet antlers
- development of nutritional standards for each species.

Appendix 1 ◊ Participants

Representatives of the following organizations participated in the drafting committee. However, the code does not necessarily have the unequivocal endorsement of any agency

Organization	***Representative***
Agricultural Institute of Canada	A. Bentley
Agriculture and Agri-Food Canada	
Animal Health Division	G. Doonan
Meat and Poultry Products Division	I. Kirk
CARC Canada Committee on Animals	J. Dalrymple
Canadian Council on Animal Care	J. Wong
Canadian Federation of Agriculture	J. Higginson
Canadian Federation of Humane Societies	S. Rammage F. Rodenburg
Canadian Meat Council	L. Campbell
Canadian Society of Animal Science	D. Fraser
Canadian Venison Council	T. Maxwell I. Thorleifson
Canadian Veterinary Medical Association	C. Lanthier
University of Alberta	R. Hudson (Chair)

Appendix 2 ◊ Guidelines for humane killing of deer by firearms

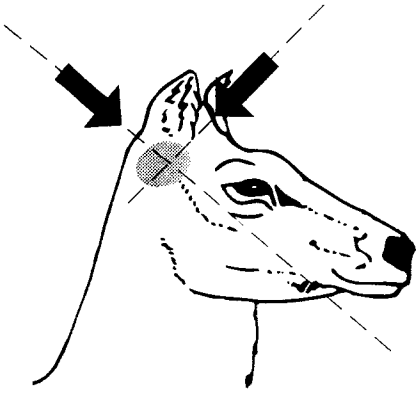

figure 1

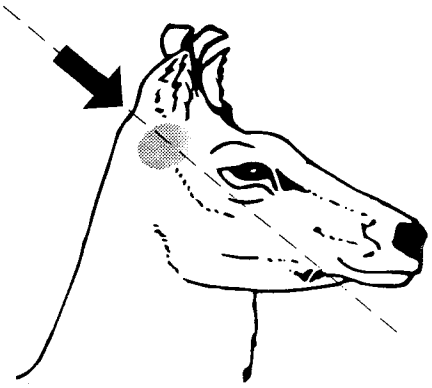

figure 3

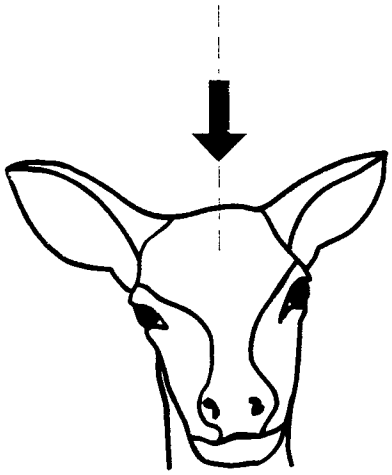

figure 2

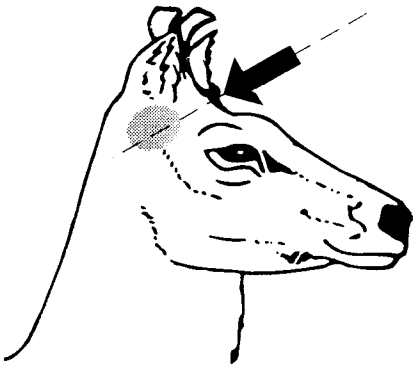

figure 4

Deer without antlers

Deer can be handled in the same manner as goats or sheep - food can be offered to the animal. The aim of the firearm should either be from behind or from the front as described in the humane killing of deer with antlers or from the top of the head at a point high up on the head equal distance from the eyes and ears (figures 1 and 2).

Deer with antlers

If the animal has antlers, the approach should be from the rear and the aim directed between the base of the horns towards the mouth (figure 3). Alternatively, the firearm can be aimed from the front just above the eyes on the midline, shooting towards the spine (figure 4).

Appendix 3 ◊ Reportable diseases

For the purpose of the current section 2 of the *Health of Animals Act*, the following are reportable diseases which may affect deer:

- Anaplasmosis
- Anthrax
- Bluetongue
- Brucellosis
- Foot-And-Mouth Disease
- Mange
- Pseudo rabies
- Rabies
- Rinderpest
- Tuberculosis
- Vesicular stomatitis

Source: Agriculture and Agri-Food Canada, *Reportable Diseases Regulations,* February 1991.

Appendix 4 ◊ Transporting deer by truck

Transport of deer and other livestock within, out of, or into Canada is subject to Regulations of the Health of Animals Act (as of 1996). This appendix is a convenient summary of the Regulations as they apply to deer that you can keep in your vehicle at all times. It is not an official document.

YOU MUST NOT

- transport a sick or injured animal where undue suffering will result, or when the animal is liable to give birth.
- continue to transport an animal that is injured, becomes ill, or is otherwise unfit to travel.
- load or unload animals in a way that would cause injury or undue suffering.
- crowd animals to such an extent as to cause injury or undue suffering.
- transport animals if injury or suffering is likely to be caused by inadequate construction of the vehicle, insecure fittings, undue exposure to the weather or inadequate ventilation.
- use ramps, gangplanks or chutes that are inadequately constructed or maintained and would be likely to cause injury or undue suffering to the animals.
- confine deer in a motor vehicle for longer than 48 hours unless they can reach their final destination in 52 hours or feed and water is provided on the vehicle.
- load an animal for a trip of more than 24 hours without first providing food and water within 5 hours before loading.

YOU MUST

- segregate animals of different species, of substantially different weights and ages, or if incompatible by nature.
- allow animals to stand in a natural position.
- provide for drainage and absorption of urine.
- either spread sand or have the vehicle fitted with safe footholds in addition to adequate bedding.
- ensure that animals unloaded for feed, water and rest remain at least 5 hours.

Appendix 5 ◊ Emergency procedures during transportation

Please post in trucks

Emergency procedures to be followed by drivers in the event of a breakdown, an accident, or any other delay during transit

1. Telephone home office immediately to report the emergency situation.

2. During business hours, telephone the nearest slaughterhouse as well as the manager of the receiving plant or shipper and receiver.

3. Telephone the packing plant or other destination. (Attach night telephone numbers.)

4. If necessary, arrange for the use of another vehicle to move the load to a sheltered area or to the plant.

5. During extremely hot or cold weather, seek shelter for the load until the emergency situation is over.

6. Seek the advice of a veterinarian in the event of distressed or seriously injured deer.

7. Do something! Use common sense. The comfort of the animals must be kept in mind at all times.

Adapted from: *Procedures Bulletin,* Ontario Trucking Association

Appendix 6 ◊ References and further reading

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