NATIONAL FARM ANIMAL CARE COUNCIL
CONSEIL NATIONAL POUR LES SOINS AUX ANIMAUX D'ÉLEVAGE

CODE OF PRACTICE

FOR THE CARE AND HANDLING OF

EQUINES

Canada

ISBN 978-1-927392-40-9 (book)
ISBN 978-1-927392-41-6 (electronic book text)

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Acknowledgment

Agriculture and Agri-Food Canada Agriculture et Agroalimentaire Canada

Funding for this project has been provided by Agriculture and Agri-Food Canada through the Agricultural Flexibility Fund, as part of Canada's Economic Action Plan.

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Preface

The National Farm Animal Care Council (NFACC) Code development process was followed in the development of this Code of Practice. This Code of Practice for the Care and Handling of Equines replaces its predecessor developed in 1998 and published by the Canadian Agri-Food Research Council.

The NFACC Code development process aims to:

- link Codes with science
- ensure transparency in the process
- include broad representation from stakeholders
- contribute to improvements in farm animal care
- identify research priorities and encourage work in these priority areas
- write clearly to ensure ease of reading, understanding and implementation
- provide a document that is useful for all stakeholders.

The Codes of Practice are nationally developed guidelines for the care and handling of farm animals. They serve as our national understanding of animal care requirements and recommended practices. Codes promote sound management and welfare practices for housing, care, transportation and other animal husbandry practices.

Codes of Practice have been developed for virtually all farmed animal species in Canada. NFACC's website provides access to all currently available Codes (www.nfacc.ca).

The Codes of Practice are the result of a rigourous Code development process, taking into account the best science available for each species, compiled through an independent peer-reviewed process, along with stakeholder input. The Code development process also takes into account the practical requirements for each species necessary to promote consistent application across Canada and ensure uptake by stakeholders resulting in beneficial animal outcomes. Given their broad use by numerous parties in Canada today, it is important for all to understand how they are intended to be interpreted.

Requirements - These refer to either a regulatory requirement, or an industry imposed expectation outlining acceptable and unacceptable practices and are fundamental obligations relating to the care of animals. Requirements represent a consensus position that these measures, at minimum, are to be implemented by all persons responsible for farm animal care. When included as part of an assessment program, those who fail to implement Requirements may be compelled by industry associations to undertake corrective measures, or risk a loss of market options. Requirements also may be enforceable under federal and provincial regulation.

Recommended Practices - Code Recommended Practices may complement a Code's Requirements, promote producer education and can encourage adoption of practices for continuous improvement in animal welfare outcomes. Recommended Practices are those which are generally expected to enhance animal welfare outcomes, but failure to implement them does not imply that acceptable standards of animal care are not met.

Broad representation and expertise on each Code Development Committee ensures collaborative Code development. Stakeholder commitment is key to ensure quality animal care standards are established and implemented.

This Code represents a consensus amongst diverse stakeholder groups. Consensus results in a decision that everyone agrees advances animal welfare but does not imply unanimous endorsement of every aspect of the Code. Codes play a central role in Canada's farm animal welfare system as part of a process of continuous improvement. As a result, they need to be reviewed and updated regularly. Codes should be reviewed at least every five years following publication and updated at least every ten years.

A key feature of NFACC's Code development process is the Scientific Committee. It is widely accepted that animal welfare codes, guidelines, standards or legislation should take advantage of the best available research.

A Scientific Committee review of priority animal welfare issues for the species being addressed provided valuable information to the Code Development Committee in developing this Code of Practice. The Scientific Committee report is peer reviewed and publicly available, enhancing the transparency and credibility of the Code.

The 'Code of Practice for the Care and Handling of Equines: Review of scientific research on priority issues' developed by the equine Code of Practice Scientific Committee is available on NFACC's website (www.nfacc.ca).

Introduction

The most significant influence on the welfare of equines is the care and management provided by the person(s) responsible for their daily care. Those responsible for equines should consider the following factors:

- shelter
- feed and water to maintain health and vigour
- freedom of movement and exercise for most normal behaviours
- the company of other equines
- veterinary care, diagnosis and treatment, disease control and prevention
- emergency preparedness for fire, natural disaster, and the disruption of feed supplies
- hoof care
- end of life.

An animal's welfare[1] should be considered in terms of the Five Freedoms (below). These freedoms form a framework for analysis of welfare within any system and those responsible for equines are encouraged to consider the Five Freedoms.[2,3]

- Freedom from Hunger and Thirst - by ready access to fresh water and a diet to maintain full health and vigour.
- Freedom from Discomfort - by providing an appropriate environment including shelter and a comfortable resting area.
- Freedom from Pain, Injury and Disease - by prevention or rapid diagnosis and treatment.
- Freedom to Express Normal Behaviour - by providing sufficient space, proper facilities and company of the animal's own kind.
- Freedom from Fear and Distress - by ensuring conditions and treatment which avoid mental suffering.

All herd sizes require adequate human resources to ensure observation, care and welfare of individual animals. Neither financial cost nor any other circumstances should result in a delay in treatment or neglect of the animals.

Equines are classified as livestock in Canadian legislation (e.g. the *Health of Animals Act* and the *Animal Pedigree Act*). They have multiple uses and purposes and are raised for recreation, work, competition and for meat. The equine industry is very diverse and this Code has been written with consideration of the different management systems in use. The authors recognize that there is more than one way to provide good animal welfare for equines.

The scope of the equine Code of Practice is on-farm (i.e. premises where horses are kept). This is to avoid duplication or inconsistencies between Codes. The equine Code includes important **pre-transport** considerations but does not address animal care during transport. Consult the *Recommended Code of Practice for the Care and Handling of Farm Animals: Transportation* [4] for information on animal care during transport. This Code does not specifically address the Pregnant Mare Urine (PMU) industry.

1 The National Farm Animal Care Council supports the following definition of animal welfare: Animal welfare means how an animal is coping physically, physiologically and psychologically with the conditions in which it lives. Physically includes pain and injury; physiologically includes environmental or disease stressors; and psychologically includes stressors that affect the senses, especially those that result in fear, fighting, distress or stereotypic behaviours due to either frustration or boredom. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

2 Farm Animal Welfare Council. Five Freedoms. Available: www.fawc.org.uk/freedoms.htm

3 The Five Freedoms are referenced by the World Organization for Animal Health (OIE), of which Canada is a member, in its Terrestrial Animal Health Code (Section 7 - Animal Welfare)

4 Canadian Agri-Food Research Council (2001) Recommended Code of Practice for the Care and Handling of Farm Animals: Transportation. Available www.nfacc.ca/codes-of-practice/transport

The *Recommended Code of Practice for the Care and Handling of Horses on PMU Ranches*[5] addresses aspects specific to this industry that are in addition to the equine Code. For specific guidelines or codes of conduct associated with equine activities that take place off farm, contact the respective governing body.

In this Code, the word "horse" refers to all domestic equine species, namely horses, ponies, miniature horses, donkeys, mules and hinnies. Specific reference is only made to donkeys, mules or other specific equines at the outset of each Code chapter, and within chapters, when necessary.

The term "knowledgeable and experienced horseperson" appears throughout the equine Code - consult the glossary for an explanation of this term as it is used in this Code.

The Equine Code Development Committee

To assemble the Code Development Committee (CDC), Equine Canada struck a Code Criteria Group to outline the criteria and process by which nominations would be solicited for the CDC. This collaborative selection process culminated in an 18-person Committee.

Representing a broad cross-section, the CDC members have significant expertise in care and custody, equine health and veterinary care, technical knowledge, research, animal protection legislation, enforcement, biosecurity and international best practices. Specifically, the CDC was composed of individuals with proven hands-on knowledge in the unique husbandry practices required for large-scale equine breeding, feedlot management, draft horses, donkeys and mules, Quarter Horses, Arabians and horses used in racing, jumping, dressage, eventing, driving, western sport, recreation and outfitting. *Appendix L* provides a list of participants on both the CDC and Scientific Committee. Consult the Preface for information on the Scientific Committee.

Broad Stakeholder Engagement through Surveys and the Public Comment Period

As part of the revision to the equine Code, NFACC and Equine Canada facilitated the development of three online surveys. The purpose was to allow wider engagement in the revision of the Code and to allow the CDC to gain further insights into stakeholder views on key Code topics as well as to garner a greater understanding of current practices of equine owners and industry professionals. Nearly 3500 people participated in these surveys and the results were used to facilitate the work of the CDC.

The final key component of the NFACC Code development process is the public comment period whereby the draft of the Code is made available online for 60 days. For the equine Code, approximately 580 individuals and 24 organizations provided submissions. The CDC was very pleased with the diversity of stakeholders who provided valuable input. Feedback was discussed by the CDC during a two-day meeting and the input informed final changes to the Code.

5 Pfizer Canada Inc. 2013. Recommended Code of Practice for the Care and Handling of Horses on PMU Ranches. Available www.naeric.org/about.asp?strNav=5&strBtn=5

Glossary

Ambient temperature: the air temperature in the surrounding area.

Ambulatory (general): able to walk. See also non-ambulatory.

Balanced (in the context of feed): a term applied to a diet or ration of feed that has all the known required nutrients in the proper amount.[1]

Body condition scoring: a tool for determining the amount of fat on an animal's body. It involves a physical palpation and visual assessment of specific anatomical sites that are most responsive to a change in body fat. A body condition score is the value assigned to individual equines from the body condition scoring scale.

Box stall: a confinement area where horses are kept loose (not tied) when housed indoors in a barn or stable.

Broodmare: a female horse used for breeding.

Colic: a sign of pain in the horse's abdomen. The term colic can encompass all forms of gastrointestinal conditions which cause pain as well as other causes of abdominal pain not involving the gastrointestinal tract.

Concentrate: a feed used with forage to improve the nutritive balance of the total ration (e.g. grain, pelleted feed).

Conformation: the degree of correctness of a horse's bone structure, musculature, and its body proportions in relation to each other. Conformation is usually judged by the horse's intended use or by breed standards.

Creep feeding: the practice of using a creep feeder, which is a feeder designed so that foals can eat concentrates, but older horses will not be able to access the feed.

"Easy keeper": an informal term used to describe individual horses who easily gain weight or tend to maintain weight or body condition score above the ideal.

"Equine Cushings" (Pituitary Pars Intermedia Dysfunction, PPID): a syndrome whereby the middle lobe of the pituitary gland (located in the brain) becomes enlarged over time resulting in over production of hormones and hormone-like substances.

Equine Metabolic Syndrome (EMS): a multi-faceted condition of obesity (generalized and/or regional), insulin resistance and laminitis. Primary contributing factors to the development of EMS are genetics and the quantity and type of feed.[2]

Exercise: for the purpose of this Code, exercise refers to any indoor or outdoor physical activity for horses including, but not limited to, riding, lunging, walking in-hand and hand grazing.

Foal: the offspring of a horse or other equines from birth to weaning and under one year old.

Forage: bulky feeds such as grass or hay; can also refer to the act of foraging (eating hay, grazing pasture, browsing).

1 Adapted from the Association of American Feed Control Officials (2005) in National Research Council (2007) Nutrient Requirements of Horses. 6th rev. ed. National Academies Press, Washington, DC.

2 Equine Code of Practice Scientists' Committee (2012) Code of Practice for the Care and Handling of Equines: Review of Scientific Research on Priority Issues. Lacombe AB: National Farm Animal Care Council.

Gait: a particular way or manner the horse moves on foot.

Grain: seed from cereal crops or corn.

Geriatric horse: for the purpose of this Code, geriatrics are ageing horses that need specialized care. Horses are **generally** considered to be geriatric when they are 15-20 years of age or older.

Gestation: the period of development of the fetus from conception to birth.

Hay: grasses or herbage especially cut and cured for animal feeding.[3]

Haylage: Feed that was cut as fresh forage and that has been chopped and stored at relatively high moisture content. Haylage undergoes a similar fermentation process as silage. See also silage.

Hyperlipemia/Hyperlipidemia: a medical condition caused, in part, by equines going off feed and that results in rapid mobilization of body fat. Fatty substances accumulate in the blood and infiltrate the liver. The syndrome can affect any equines although donkeys, ponies and miniature horses are at greater risk.

Jack: a male donkey.

Jennet: a female donkey.

Knowledgeable and experienced horseperson: For the purpose of this Code, this refers to people who have knowledge of a given topic or have successfully managed horses relative to a given topic. This includes those who have years of hands-on experience with horses and those who have knowledge gained through formal education, training and/or professional certification (some examples include experienced breeders, certified trainers/coaches and extension staff).

Lameness: for the purpose of this Code, lameness is any alteration in the horse's gait that appears to be caused by pain and discomfort. Lameness can manifest as a change in performance or willingness to move, head nodding or hip hiking.

Laminitis: inflammation in the foot (specifically the sensitive laminae connecting the hoof bone and the hoof capsule) that may result in severe pain, abnormal foot growth, and lameness. Also known as Founder.

Mare: an adult female horse.

Non-ambulatory: an animal that is unable to stand without assistance or move without being dragged or carried, regardless of size or age.[4]

Paddock: a small, fenced-in field or enclosure (with varying surface terrain) where horses are kept or exercised.

Parasitism: an infection with parasites.

Parturition: the act or process of giving birth to the foal (also referred to as foaling).

Pasture: a large, fenced-in area where horses are kept loose and can graze.

Pelleted feed: feed that has been ground and processed to produce a pellet shaped feedstuff.

3 Adapted from the Association of American Feed Control Officials (2005) in National Research Council (2007) Nutrient Requirements of Horses. 6th rev. ed. National Academies Press, Washington, DC.

4 Health of Animals Regulations. C.R.C. c. 296. Available: http://laws-lois.justice.gc.ca/PDF/H-3.3.pdf.

"Poor doer": an informal term used to describe individual horses that have difficulty gaining weight or maintaining appropriate weight or body condition score.

Reinforcement: positive or negative reinforcement are training terms that refer to anything that will make a response from the horse more likely in the future.[5] "Positive" and "negative" do not mean "good" and "bad" in this context, but describe whether the behaviour is reinforced by having something added (positive reinforcement) or removed (negative reinforcement).[5]

Ration: the total amount of feed that is provided.

Silage: succulent, moist feed (from forage, corn or other crops) that has gone through a process of fermentation that helps it stay free from spoilage.

Stable: an enclosed building with a roof and sides for housing horses.

Stallion: an adult male horse that has not been castrated and is typically kept for breeding.

Stereotypy: formerly referred to as a vice, a stereotypy is an abnormal behaviour that serves no apparent function and is performed in a repetitive, invariant way.[5] One example is cribbing/wind sucking. *Section 6.1.1* provides other examples.

Social opportunities: for the purpose of this Code, this term refers to occasions when horses can interact with other horses via sight, sound and/or direct contact.[5]

Soring: the practice of inflicting pain on the limbs of a horse for the purpose of accentuating its gait. Note: this practice is not acceptable (see the Requirements in *Section 6.3*).

Soundness: freedom from lameness or disease that would affect the horse's usability.

Teeth floating: A procedure of filing down the sharp enamel points on the horse's teeth. Teeth floating is necessary because the teeth of horses continue to erupt from the gums until horses are approximately 17 years of age.

Temperament: the horse's disposition.

Thermoneutral zone: a temperature range in which animals do not have to expend any additional energy to maintain normal body temperature. In horses, the thermoneutral zone is between 5-20°C.

Tie stall: a space in a barn or stable where horses are tied when housed indoors. Also called a standing stall.

Tractability: the horse's capability to be easily led, taught, or controlled.

Turnout: for the purpose of this Code, this terms refers to allowing horses "free time" (i.e. not under controlled exercise) in a dry lot, arena, pen or pasture. Turnout does not necessarily mean the horse is grazing.

Weanling: a term to identify equines from weaning until one year of age.

Yearling: a term to identify equines from one to two years of age.

5 Equine Code of Practice Scientists' Committee (2012) Code of Practice for the Care and Handling of Equines: Review of Scientific Research on Priority Issues. Lacombe AB: National Farm Animal Care Council.

1 Duty of Care

Horses, donkeys, and mules can live for 30 years or longer. Ownership of these animals can be a great pleasure, but it is also a significant responsibility associated with a long-term commitment of time and money. Owners and staff have a duty of care for the animals they are permanently or temporarily responsible for. A parent or guardian of a minor needs to take responsibility for any animal that is owned or cared for by the minor. If an owner leaves the animal in the care of another person, it is the owner's duty to ensure the person is competent and has the necessary authority to act in an emergency. In this case, it may be advisable to have a written boarding contract in place.

Responsibility for an animal includes having an understanding of their specific health and welfare needs, and having the appropriate knowledge and skills to care for the animal. Those responsible will also have to comply with relevant legislation and be aware of the Requirements and Recommended Practices in this Code. They should also know when to seek advice from a knowledgeable person.

Donkeys and mules need the same good animal care for their health and well-being as do horses. Key points about specific animal care needs of donkeys and mules are included throughout this Code and are summarized in *Appendix F*.

REQUIREMENTS

Owners must have the resources for and knowledge of the basics of care as stated in this Code and ensure such care is provided.

Principal caregivers must be familiar with and provide the basics of care as stated in this Code.

1.1 Pre-Purchase Considerations

Before buying or agreeing to become responsible for a horse, consider the following:

What are the costs? The costs vary but can be substantial. The cost of purchasing a horse will be less than the ongoing costs associated with its care. Refer to *Appendix A-Template Budget for Horse Ownership*.

What type of horse is appropriate? In the context of your skill level and intended use for the horse, evaluate what breed, sex, age, level of training, and temperament will be most appropriate. Children and novice owners may benefit from buying a horse that is already well trained or that has experience in their intended discipline.

How much time is needed? Consider the time commitment for daily care (e.g. grooming, feeding, mucking out) along with non-daily tasks (e.g. veterinary visits, stable maintenance and hoof care).

How and where will the horse be kept? Suitable off-site accommodation needs to be available unless there is suitable accommodation on the home property.

What skills and knowledge are required? All persons responsible for horses **must** have good working knowledge of their feed and water requirements, stable maintenance, signs of ill health, humane handling, and common horse injuries.

What contingency plans should be made? A simple plan may involve identifying capable persons who can look after the horse should you be temporarily or permanently unable to care for the animal. Another aspect of horse ownership is planning for the time when you may want or need to bring your ownership of a horse to an end. Refer to *Section 9-Change or End of Career*.

RECOMMENDED PRACTICES

a. gain experience in horse care prior to ownership (e.g. volunteer work, riding stables, Horse Clubs)
b. develop a budget that includes short- and long-term costs to ensure you are financially capable of caring for the horse (see *Appendix A - Template Budget for Horse Ownership*)
c. view a prospective horse with a knowledgeable and experienced horseperson (e.g. certified trainer or coach, extension staff)
d. try the horse in all aspects of work the horse will be expected to perform
e. find a knowledgeable and experienced horseperson to provide ongoing advice for horse care
f. participate in continuing education opportunities (e.g. hands-on horse clinics, conferences, webinars).

1.1.1 Pre-Purchase Veterinary Examinations

A pre-purchase veterinary examination informs prospective owners of the horse's overall health and condition (1). The veterinarian's role during the examination is to discover pre-existing conditions or problems that potentially affect the future soundness of the horse (1). The results are interpreted relative to the intended use of the horse - a high performance prospect may require a more extensive examination compared to a pleasure horse. Prospective owners are strongly urged to have a pre-purchase examination performed by a veterinarian who is proficient in equine practice. The consequences of buying a horse that is not fit for the purpose for which it was purchased outweigh the costs of the examination.

RECOMMENDED PRACTICES

a. arrange for the examination to be done by a veterinarian who is independent of the seller and who has expertise in the breed, discipline or use for which the horse is being purchased
b. inform the veterinarian of your primary uses for the horse and your short- and long-term goals
c. consult the veterinarian on what procedures should be included in the examination and the costs of those procedures (2)
d. ensure that, as the buyer, you are present during the examination and/or have a trusted agent present.

2 Facilities and Housing

Horses, donkeys and mules are successfully managed in a variety of outdoor and indoor environments ranging from extensive range to relatively intensive housing in yards, pens or stables. Attentive management is important regardless of how horses, donkeys and mules are kept.

2.1 Pastures and Yards

Horses are highly adaptable to many weather conditions (3) - keeping them outdoors or giving them frequent outdoor access is encouraged. Mud management is an important factor in some regions. If horses do not have access to a mud-free site, they can become lame and/or acquire painful skin or hoof conditions. *Appendix K* provides references on pasture management.

The risk of injury increases when horses are overcrowded in pastures or yards or when there is competition for any resource. The amount of outdoor space horses need depends on many factors. Generally a **minimum** space allowance per horse, in m^2, is 2 to 2.5 times the height of the horse (at the withers) squared (4). Ideally, there should be enough space to allow horses to canter.

For an open-front shed housing more than one horse: provide 11.1m^2 (120ft^2) each for the first two horses and 5.6m^2 (60ft^2) for each additional horse kept in the pasture or paddock.

REQUIREMENTS

At a minimum, each horse must have enough space to move easily, walk forward, turn around with ease and lie down in a normal resting posture. There must also be sufficient space for subordinate horses to escape aggression.

In muddy conditions horses must, at a minimum, have access to a mud-free, well-drained area in the pasture/yard on which to stand and lie down.

The application of fertilizers, pesticides, herbicides and farm manure must be timed to prevent any health risks to grazing horses or contamination of ground water.

RECOMMENDED PRACTICES

a. practice good pasture management (e.g. pasture rotation, weed control, appropriate stocking density)
b. maintain pastures free from equipment, debris and poisonous plants.

2.1.2 Shade and Outdoor Shelter

Horses can adapt to a wide range of environmental conditions due to their physiological and behavioural responses that help them maintain body temperatures within a normal range (3). **Shelter can be natural (e.g. trees, hedges) or constructed (e.g. shade cloths, stables)** (3). Research shows that horses are particularly likely to seek shelter during rainy, windy conditions or snowy, windy conditions (3).

The following equines are more vulnerable to cold, damp weather:

- foals and geriatrics (3)
- equines that are injured, sick or have a low body condition score (3)
- equines with a moist or wet coat, due to rain or sweat (a wet coat has reduced insulation capacity) (3). The hair coat of donkeys makes them particularly vulnerable to cold, damp weather
- body clipped equines
- equines that are not acclimatized to cold, damp weather.

Blankets are sometimes used to offer protection from weather and insects. However, blankets can lead to sores and heat stress. Blankets can also mask changes in the horse's health, and some of these changes can occur quickly (e.g. skin infections, a change in weight or body condition score). Therefore, if blankets are used, the condition of the horse beneath the blankets must be examined at least weekly.

Thermoregulation

Within a temperature range called the "thermoneutral zone" animals do not have to expend any additional energy to maintain normal body temperature (3). In horses, the thermoneutral zone is between 5 and 20°C (3). Within the lower or upper temperatures of this range, horses may modify their behaviour without any increased energy needs. In temperatures outside the range, increased metabolic energy is required to maintain normal body temperature.

Shivering is a heat-producing response to cold temperatures. It may be seen particularly when the horse is unable to move around, whether indoors or outdoors. Shivering horses are not thermally comfortable (5).

Horses should also be monitored for heat stress in hot ambient temperatures. A horse facing heat stress may appear weak or disoriented. Other signs of heat stress include muscle tremors and shallow or rapid breathing.

Refer also to *Section 3.4.1-Thermal Impacts on Dietary Energy Needs* and *Appendix K-Resources for Further Information*.

REQUIREMENTS

Horses must have access to shelter (constructed or natural) that protects them from the harmful effects of extreme weather conditions.

Promptly assist individual horses that are showing signs of heat or cold stress.

If blankets are used, the condition of the horse beneath the blankets must be examined at least weekly.

Blankets must be appropriate for the weather conditions and not result in heat stress.

RECOMMENDED PRACTICES

a. ensure there is sufficient shelter space to accommodate all horses in a given turnout area or paddock at the same time
b. build or renovate shelters for the easy removal of wastes
c. remove blankets daily to inspect the horse's condition
d. ensure blankets are well fitted and in good repair. If blankets are used in wet conditions, they should be waterproof and breathable.

2.1.3 Mixing and New Arrivals

Horses are herd animals and prefer to live in groups. A single horse kept on a farm may benefit from increased human contact or the companionship of other grazing species (e.g. sheep). Donkeys have a particularly strong need for social opportunities and may become depressed or apathetic when separated from a former companion. This can have health implications, particularly if they go off feed.

Within a herd structure, horses interact on a dominance hierarchy. Some horses are more aggressive and may not be suitable for group turnout. When forming new groups, the introduction of new animals brings a risk of injury to horses.

Aggression can be reduced by increasing the space allowance (initially or permanently) and/or allowing horses to become familiar with an existing group by first keeping them in an adjacent area (but separated by a strong fence or stall wall). **Refer to** *Section 4-Health Management* **for information on disease transmission, an important consideration when mixing animals, especially new arrivals**.

REQUIREMENTS

Horses kept in groups must be managed in a way that minimizes the risk of injury.

RECOMMENDED PRACTICES

a. get advice from a knowledgeable and experienced horseperson on the first introduction of horses
b. segregate horses into compatible groups. Where necessary, take into consideration the nutritional needs, age, sex and size of the horses
c. ensure newly formed groups are monitored frequently and checked for injury
d. separate animals that prove to be incompatible.

2.1.4 Fences and Gates

Several types of fencing materials are suitable for horses, including wood, metal pipe, mesh and electric. Page wire, barbed wire and narrow gauge, high tensile steel wire are used in extensive grazing settings but should be avoided in closely-confined paddocks. These types of fencing can cause severe injury to horses, especially if in poor repair.

Unless horses are effectively contained through strong, well-maintained fencing and gates they may leave the property, which brings a significant risk of injury to that horse (e.g. road accidents) and the safety of other horses and humans. The strength and height of fencing is particularly important for stallion enclosures.

REQUIREMENTS

Fences must be constructed and maintained to minimize the risk of injury and must be strong enough to contain horses. Refer to municipal fencing by-laws, if applicable.

Electric fences must be installed according to the manufacturer's specifications. All power units for electric fences must be designed to prevent short circuits and/or stray voltage.

Temporary electric fences used for strip grazing or pasture rotation are not an acceptable permanent perimeter fence for horses.

RECOMMENDED PRACTICES

a. introduce horses to unfamiliar fenced areas during daylight hours to reduce the risk of injury
b. mark smooth wire and other hard-to-see fencing in such a way that it is more visible to horses (e.g. tie flags to the fencing)
c. supervise horses when they are first introduced to electric fencing (and avoid mixing new horses at the same time as the group is first introduced to electric fencing)
d. ensure gates used by horses are at least 1.22m (4ft) wide.

2.2 Facilities for Special Needs

2.2.1 Foaling

Foaling can take place in stalls, paddocks or pastures. The foaling area should be large enough to accommodate the ambulatory movements of the mare/jennet during foaling and allow her to comfortably lie down on her side during and after foaling. After foaling, the area should provide ample space for the addition of the foal. If box stalls are used to house the mare/jennet and foal (up to two months of age) they should be at least 30% larger than the average box stall.

If foaling takes place in a fenced area, the fencing should be constructed to prevent the mare's/jennet's legs from becoming entangled when she lies down to foal and to ensure the foal cannot become entangled. Stalls used for foaling should have solid walls for safety. It is also important to ensure the foaling area offers protection from predators.

Every effort should be made to ensure foals are thermally comfortable. Foals are sensitive to adverse weather conditions and can also lose body heat if they are wet, lie down on cold surfaces or are kept in drafty environments. **Keeping warm requires energy - letting a newborn foal become chilled is an immense drain on a foal's already modest energy reserves**. Weak, premature or sick foals are even more vulnerable to chilling, and the loss of body heat in these foals can substantially reduce their chances of survival.

Heat lamps or space heaters are sometimes used to warm the stall. However, unless used with caution, such heaters can be a fire hazard and can lead to overheating, particularly if the foal is not able to move away from the heat source. Using a foal blanket is often the most practical option and is effective. Any foal requiring an additional heat source or blanket should be monitored frequently.

RECOMMENDED PRACTICES

a. provide a dry, sheltered foaling area
b. allow the mare/jennet to become familiar with the foaling area by moving her to that site on the farm several days before the expected foaling date
c. keep a familiar companion near the mare/jennet if she is to foal in an area isolated from herd mates
d. if foaling coincides with adverse weather conditions or for any weak, premature or sick foal, ensure the foal is dried off promptly and that there is supplemental shelter and other means of keeping the foal warm (e.g. extra bedding, foal blankets).

2.2.2 Stallions

Stallions need specialized management and should only be handled and cared for by experienced horsepeople. While stallions may not be suitable for turnout with other horses, efforts should be made to meet their social needs and/or provide environmental stimulation.

RECOMMENDED PRACTICES

a. ensure fencing and stall materials for stallions are particularly safe and strong.

2.2.3 Sick or Injured Horses

Sick or injured horses benefit from facilities (constructed or natural) that minimize stress and provide protection from environmental extremes. *Appendix K* provides references on preventing the spread of disease.

REQUIREMENTS

Owners must have the ability to segregate sick or injured horses for treatment.

If sick pens or stalls are used, they must be equipped with a source of feed and water and be cleaned between uses.

RECOMMENDED PRACTICES

a. have sheltered, segregated and well-bedded sick pens/stalls for horses that are sick, injured or recovering
b. when dealing with a contagious disease, situate sick pens/stalls such that contact is not possible between horses in adjoining pens
c. build sick pens/stalls that can be easily cleaned and disinfected.

2.3 Indoor Housing

Depending on the region, horses may not need indoor housing. Horse welfare should be prioritized when constructing or renovating facilities. The main considerations are the safety and comfort of the horses, ease of access, and adequate drainage and ventilation. If poorly designed or managed, stabling can contribute to the spread of disease and the risk of injury. *Appendix K* provides references on preventing the spread of disease.

REQUIREMENTS

Facilities must be designed and maintained to minimize the risk of injury.

RECOMMENDED PRACTICES

a. build or renovate facilities so that horses have contact with other horses via sight, sound and smell
b. inspect equipment regularly to ensure it is in good working order
c. avoid having sharp corners and projections and ensure facilities are free from dangerous objects
d. build facilities that can be easily cleaned and disinfected
e. when building new facilities, consider factors such as drainage and manure removal when determining where on the farm to situate the facilities.

2.3.1 Indoor Space Allowance

An appropriate space allowance, in m^2, is 2 to 2.5 times the height of the horse (at the withers) squared (4). This space allowance allows for the normal movements of the horse, including lying down.

Sample calculation based on the above formula for a horse that measures 15 hands at the withers: (Step 1) 15 x 4in = 60in, which converts to approx. 1.5m; (Step 2) 1.5m x 2 = 3m; (Step 3) 3 x 3 = $9m^2$.

REQUIREMENTS

For indoor facilities: each horse must have enough space to lie down in a normal resting posture, stand with the head fully raised, walk forward and turn around with ease. For tie stalls, each horse must have enough space to lie down in a normal resting posture, stand with the head fully raised and step forward in comfort.

For group housing, there must also be sufficient space for subordinate horses to escape aggression.

RECOMMENDED PRACTICES

a. ensure ceiling or support beam height allows a minimum clearance space of 61cm (2ft) above horse head height when standing (ideally, the clearance space should exceed 1m [3.3ft]). Ceiling height is important for horse comfort, safety and ventilation.
b. ensure alleyways in indoor systems are wide enough to allow a horse to turn around comfortably (3m [9.8ft] is a suggested minimum width)
c. ensure doorways used by horses are wide enough to allow easy passage (e.g. 1.22m [4ft] wide). Doorways that may need to accommodate two horses at once should be twice this width. The use of doorways built for human passage is not ideal for horses and is discouraged
d. ensure entrances used by horses are at least 30.5cm (1ft) above head height when the horse is in a normal standing posture.

2.3.2 Indoor Lighting

Lighting in indoor facilities should provide uniform illumination and permit effective observation of horses. Lighting is important for normal reproduction, seasonal endocrine rhythms and seasonal adaptation (e.g. hair coat).

REQUIREMENTS

For horses kept indoors without natural light, artificial lighting must be provided during the day. Keeping horses in continuous darkness is not acceptable.

RECOMMENDED PRACTICES

a. ensure light fixtures are safe and not accessible to horses (e.g. avoid the use of exposed light bulbs)
b. provide horses, and especially foals, with a period of darkness (to encourage sleeping).

2.3.3 Indoor Flooring

The ground or flooring in stalls and alleyways should be well-drained and must provide non-slip surfaces to reduce the risk of horses slipping or falling. Examples of non-slip surfaces include sand, dirt (but not mud), rough cut planked floors, rubber mats, and stamped or grooved concrete. For shod horses, the addition of rubber mats or epoxy flooring to concrete helps avoid slipping. Ideally, stall flooring will be reasonably level but designed to move excess moisture away from horses. Soft ground surfaces (e.g. sand, earth) should be routinely maintained by leveling out any holes. Refer also to *Section 2.3.4-Indoor Bedding.*

REQUIREMENTS

Provide non-slip surfaces in stalls and alleyways to reduce the risk of horses slipping or falling.

RECOMMENDED PRACTICES

a. ensure flooring is maintained as dry as possible and free from standing water or urine.

2.3.4 Indoor Bedding

Well-managed bedding provides comfort, warmth, dryness, traction and protection against abrasions. Examples of bedding include straw, shavings, shredded paper and peat moss. Each type of bedding has advantages and disadvantages (3). The Scientific Committee report for the equine Code, listed in the References, provides more detail.

Horses prefer to lie down in bedded areas in the stalls; therefore, providing ample clean bedding also helps ensure horses get enough rest, which is important for their well-being and performance (3).

REQUIREMENTS

Ensure stalls are kept clean. Horses must be provided with a dry lying area. The area must also be of a design or texture that will not bruise, cut or otherwise injure the horse. Concrete or hard rubber mats without bedding are not acceptable surfaces.

Bedding must be non-toxic.

RECOMMENDED PRACTICES

a. ensure stalls have a depth of bedding sufficient to absorb urine and encourage the horses to lie down
b. remove wet and soiled bedding at least once a day. For deep bedded systems, add clean, dry bedding daily
c. provide disposable bedding on top of stall mats to help absorb urine and provide extra cushioning
d. use bedding that is as dust free as possible
e. where possible, remove horses from the building when cleaning stalls and allow airborne particles to settle before letting horses re-enter the stalls.

2.3.5 Indoor Air Quality and Humidity

Respiratory problems can be created or made worse by poor bedding practices and poor indoor air quality. The concentration of ammonia and airborne particles, such as dust and mould, are of particular concern (3). The concentration of fungal spores, the main component of dust in stables, is determined by the rate of release from feed and bedding and the rate of clearance, mainly by ventilation (6). Keeping facilities and bedding clean helps maintain good indoor air quality.

Excessive ammonia concentrations can pose a health threat to humans and animals. The concentration of ammonia should ideally be less than 10ppm and must not exceed 25ppm. **When a human observer can detect ammonia (by smell or irritation to the eyes) it is likely to be at a concentration of 20ppm or higher. There are also several tools for measuring ammonia concentration, including litmus paper, detection tubes and electronic devices.**

A good ventilation system will remove stale air, maintain ideal ambient temperature, bring in fresh air (without causing drafts, especially at horse level) and remove excess heat and moisture (a factor in mould development). The horses' respiration can be a significant contributor to indoor moisture.

REQUIREMENTS

Air quality in barns must be maintained to prevent the buildup of noxious gases, dust and moisture.

Ventilation must effectively maintain good indoor air quality.

The concentration of ammonia in the air must not exceed 25ppm. Refer to the above information on options for assessing ammonia concentration.

RECOMMENDED PRACTICES

a. strive to maintain good indoor air quality at all times (see *Appendix K-Resources for Further Information*)
b. avoid exposing horses to drafts when housed indoors.

2.4 Safety and Emergencies

Emergencies can necessitate the need to urgently release horses from a housing facility (e.g. in the case of a barn fire) or urgent evacuation from the farm (e.g. due to a flood or forest fire). **In the case of a fire, horses should be secured in a safe location as they may return to a barn that is on fire**. Refer also to *Section 8.2.1-Training to Load* and *Appendix K-Resources for Further Information.*

Toxic materials must be securely stored. Serious health consequences can arise if horses gain access to such materials.

REQUIREMENTS

Develop an emergency action plan for emergencies that may occur in your area.

Toxic materials must be securely stored such that horses cannot gain access to them.

RECOMMENDED PRACTICES

a. consult a local fire department for specific advice on fire prevention, particularly before renovating or building a new facility
b. ensure your emergency action plan includes evacuation procedures and emergency contacts. *Appendix K* provides references on how to develop a plan and local fire authorities can perform a site visit to review emergency preparedness.
c. ensure staff are familiar with your emergency action plan
d. have fire extinguishers (Class A,B,C) located at various points in any facility and ensure staff know of their location and proper use
e. do not store combustible materials near where horses are kept
f. check electrical equipment regularly for stray voltage and ensure wiring or electrical panels are not accessible to horses
g. use non-toxic paints or wood preservatives, especially on fences or stall doors
h. maintain a perimeter fence to prevent horses from leaving the property
i. ensure stalls and equipment that restrains horses have quick release mechanisms. A halter and lead rope should be available at each stall front to facilitate the rapid removal of horses
j. build or renovate facilities for the rapid removal of horses (e.g. a door leading to a secure, fenced runway where horses can be released rather than haltering each horse).

3 Feed and Water

Horses, donkeys and mules require good quality feed. Good overall feed management includes providing feeds that are safe and that meet the nutritional and behavioural needs of horses, donkeys and mules. **Good quality forage (hay or pasture) should form the bulk of the diet for equines**. *Section 4.5-Body Condition Scoring* includes other information relevant to feeding equines.

3.1 Water

Water is the single most important nutrient in the management of horses. Equines (in particular donkeys and mules) will limit their water intake to the point of dehydration if the quality (palatability) of drinking water is compromised. They may also limit their intake of water from a new source, such as when moved to a new location. It may be advisable to take a supply of water with you on trips.

Generally, the **minimum** daily amount of water required by horses at maintenance and in a moderate environment (i.e. 5°C-20°C) is 5L (1.32gal) of water for every 100kg (220lbs) of body weight (3). The amount of water the horse needs will go above this minimum with:

- increased humidity
- increased ambient temperature
- increase in the horse's metabolic activity level (in work, pregnant, lactating)
- the presence of some health conditions (e.g. diarrhea)
- a diet high in salt or potassium.

Refer to *Appendix B-Sample Water Intakes.*

Snow as a Water Source

There is limited research on snow as a sole water source for horses (3). Given the scientific research on the water needs of horses in general, snow alone will not meet their water requirements. Some research shows that limiting liquid water intake can lead to reduced feed intake, a particular concern in the winter months given the increased energy needs of horses in cold temperatures (3). Water requirements may even increase in cold temperatures because water intake increases as feed intake increases (3).

REQUIREMENTS

Horses must have access to safe, palatable and clean water in quantities to maintain health and vigour.

In extreme weather conditions (cold or hot), special attention must be paid to ensure water availability, access and intake.

Water troughs, containers and any automatic watering devices must be cleaned regularly and maintained in working order with no sharp or abrasive edges.

RECOMMENDED PRACTICES

a. construct and locate water troughs and buckets so they are protected from contamination and freezing
b. check automatic watering systems daily to ensure they are dispensing water properly
c. check for stray voltage from the water source (e.g. electric fence ground rods and defective heaters). Horses may refuse to drink if they receive even a slight electric shock when drinking

d. offer tepid water in cold temperatures to encourage intake, especially for geriatric horses (water can be heated up to 20°C to optimize intake in cold temperatures) (7)
e. test water quality at least annually, unless it is from a previously tested water supply safe for human consumption.

3.2 Safety of Feedstuffs

Before feeding hay, ensure it is free from dust, mould, soil, weeds and poisonous plants. Concentrates should be dust-free and not too finely ground. Some feeds that are appropriate for other farm animals are **not** appropriate for horses (e.g. medicated cattle feeds).

Feed must also be securely stored. This will help prevent contamination of the feed which can impact horse health. When horses gain unrestricted access to concentrates (e.g. pellets, grains such as oats and barley), they are likely to overeat, which can also cause serious health problems (3).

REQUIREMENTS

Horses must have daily access to forage that is free from visible mould and has minimal dust.

Horses must only receive feedstuffs that are appropriate for the species.

Concentrates must be stored in a secure manner that prevents horses from overeating.

RECOMMENDED PRACTICES

a. ensure the ration has been balanced for nutrient content and that all feed components used in the ration are of good quality and free from spoilage
b. read labels on all feeds
c. clean buckets and troughs regularly
d. store concentrates in sealed, rodent-proof containers
e. remove baling twine and any other debris from the feeding area.

3.3 Feeding Behaviour

Horses are strongly motivated to forage (eating hay, grazing pasture) based on their inherent nature (3). When given the opportunity, they exhibit approximately the same feeding patterns observed in free-ranging horses: eating an average of 12 hours per day and never voluntarily fasting for more than 3-4 hours (3).

Horses without available pasture or free-choice forage (e.g. round bales) should be fed at least twice daily. If feeding concentrates, a good practice is to feed forage first. Feeding forage increases the amount of time horses spend eating and results in slower digestion. Allowing large spans of time between meals (and thus with the horse's stomach essentially empty) appears to be linked to gastric ulcers and has sometimes been associated with increased frequency of stereotypic behaviour, such as cribbing.

RECOMMENDED PRACTICES

a. employ feeding strategies that allow horses to forage (e.g. grazing pasture, eating hay in a dry lot) or that allow horses to mimic their natural feeding behaviour (e.g. slow-feeding hay nets, trickle feeders)
b. maximize the time that horses have access to forage. Depending on dietary needs, this may be achieved by free-choice feeding of forage, feeding forage multiple times per day or using slow-feeding devices
c. allow horses to feed in a head-down position, when possible. This results in natural dental wear and reduces the risk of respiratory conditions. The ground/flooring where horses are fed should be free from contaminants (e.g. sand and manure) or the feed should not be in direct contact with the ground.

3.4 Nutritional Content and Feed Management

The amount of feed horses need is based on the horse's maintenance needs (i.e. to maintain at rest or idle) plus the horse's activity needs (growing, in work, pregnant, lactating). The average mature horse will consume 1.5-2% of its body weight in feed per day to meet its daily maintenance needs. **As forage is important to maintain proper gut function, it is crucial that forage forms the majority of the ration**.

The nutrient content of hay can vary. With forages of good nutritional content, little to no supplementation is needed. Donkeys, mules, miniature horses, ponies, and some breeds of horses are particularly prone to obesity. These equines may need special feed management (e.g. provide coarse grass types of hay and/or some straw).

Feeding haylage or silage can be suitable for horses provided these feedstuffs are of excellent quality; are free from toxins and ruminant-specific additives; and the horses are given time to adapt to this type of feed. Horses fed haylage or silage should be vaccinated against botulism poisoning.

Concentrates are fed at different rates based on the increased energy needs not met by the forage. The quantity of concentrates fed should be no more than that necessary to provide the required energy - many horses will not need concentrates to meet their energy needs. Feeding excessive concentrates can contribute to obesity, digestive upset and laminitis.

Minerals and vitamins may be deficient in some diets. It is advisable to consult a nutritionist or veterinarian familiar with the nutrient content of feeds grown in your region.

Feed Space

Feed space varies depending on the size, number, and temperament of horses that will feed simultaneously from the same site (4). Generally, competition for feed can be reduced by providing horses in groups with multiple feeding sites (whether buckets or boxes) (4). Hay racks or feed troughs that provide 1m (3.3ft) of feeding space per animal are generally appropriate. **An extra feeding point (i.e. one more than the number of horses) can help reduce aggression**.

REQUIREMENTS

Horses must receive a diet that is adequate for maintaining health and vigour.

The daily ration must address the horse's maintenance and activity needs and other factors relevant to individual horses and the environment.

Horses must have access to salt either provided in the ration or free access (a block or loose salt).

RECOMMENDED PRACTICES

a. consult a nutritionist or veterinarian to develop a feed program and balanced ration
b. monitor the weight and body condition score of individual horses on a weekly basis and adjust the feed to maintain an optimum body condition score (refer to *Section 4.5-Body Condition Scoring*)
c. have feeds, including forage, analyzed to obtain accurate nutrient values
d. provide feed on a regular daily schedule, preferably divided into several meals
e. make any changes to the type or quantity of feed gradually over 7-10 days to avoid gastrointestinal upset
f. feed on the basis of the energy value and weight of the feed (not volume of feed).

3.4.1 Thermal Impacts on Dietary Energy Needs

Horses exposed to ambient temperatures below 5°C need more feed (particularly forage) for maintenance (3). Most horses will increase their feed intake in cold temperatures achieving their increased energy needs; however, some may need to be fed a more energy-dense diet (3). Horses may voluntarily decrease feed intake as temperatures increase (3). Refer also to *Section 2.1.2-Shade and Outdoor Shelter* and *Appendix K-Resources for Further Information*.

RECOMMENDED PRACTICES

a. increase the quantity of forage in the diet during cold temperatures
b. supply additional feeds (e.g. concentrates) for horses not maintaining their body condition on forage only during cold temperatures.

3.4.2 Growing Horses

Growing horses will generally consume 3% of their body weight in feed per day. Their specific feed requirements depend on their age, growth rate, activity level and anticipated weight at maturity. A key principle in feeding young, growing horses is to provide high quality feeds that are balanced for growth.

Foals and Weanlings

The dam's milk will normally meet the foal's nutrient requirements for the first 6-8 weeks of life. If creep feed is necessary, it should be provided to foals at a rate of 0.5-1% of body weight per day to a maximum of 1.8-2.3kg (4-5lbs) (8). The same formulation of creep feed can be fed to weanlings at a rate of 1% of body weight per day up to a maximum of 2.3-2.7kg (5-6lbs). Weanlings need high quality hay fed free choice or at 1.5-2% of body weight per day. Creep rations need to be balanced for growth.

Yearlings and Two-Year-Olds

Growth rate slows considerably by 12 months; however, even two-year-olds have higher nutrient requirements than mature horses at maintenance (8). It is advisable to feed yearlings and two-year-olds separately from mature horses as they may not compete well when fed with mature horses (8). If high quality hay or high quality pasture is available, yearlings and two-year-olds may not need concentrates (8).

REQUIREMENTS

Growing horses must receive a diet that is adequate for maintaining health, growth and vigour.

RECOMMENDED PRACTICES

a. consult a veterinarian or nutritionist when caring for an orphan foal. Specialized knowledge is needed to meet their nutritional requirements
b. ensure the total daily ration for growing horses consists of 13-15% protein overall (depending on the region, the protein content of forage will vary and should be balanced with the concentrate)
c. consult a nutritionist or veterinarian to determine if your foal would benefit from creep feed
d. consult a nutritionist or veterinarian to ensure the nutrient requirements of young horses entering training are met
e. feed horses of similar nutritional needs together.

3.4.3 Horses in Work

Work increases nutrient needs. Dietary energy (the caloric content) is the nutrient most affected by increased work (9). Other nutrient requirements also increase marginally; however, the increased protein, vitamin and mineral needs are often met with the extra energy source (9). The addition of more energy-dense feeds (e.g. concentrates) to the ration is usually necessary for horses in work. Added fat can be used to reduce reliance on large amounts of carbohydrates (9).

REQUIREMENTS

Horses in work must receive a diet that is adequate for maintaining health and vigour.

RECOMMENDED PRACTICES

a. divide the concentrate ration into at least two meals and avoid feeding more than 0.5-0.6kg (1.1-1.3lbs) of concentrate per 100kg (200lbs) of body weight in any single feeding
b. avoid feeding immediately prior to or after strenuous exercise
c. ensure sufficient salt is provided as horses lose salt in sweat during work
d. ensure any increase in concentrate is done gradually over 7-10 days to prevent digestive upset.

3.4.4 Stallions

In the breeding season, stallions have higher energy requirements similar to horses in light work (see *Section 3.4.3*). Although the energy expended by the stallion during mating is modest, the additional activity or changes in behaviour (e.g. pacing, nervousness) can substantially increase energy needs (10). Stallions finishing the breeding season in good body condition can be tapered down to maintenance by increasing the hay portion and decreasing the concentrate portion (10). Adding extra feed or supplements will not enhance fertility for stallions already receiving a balanced diet (10).

REQUIREMENTS

Stallions must receive a diet that is adequate for maintaining health and vigour.

RECOMMENDED PRACTICES

a. take advantage of the months prior to the breeding season to ensure the stallion's body condition is appropriate (refer to *Section 4.5-Body Condition Scoring*)
b. ensure any increase in concentrate is done gradually over 7-10 days to prevent digestive upset (9)
c. avoid feeding more than 0.5-0.6kg (1.1-1.3lbs) of concentrate per 100kg (200lbs) of body weight in any single feeding (9).

3.4.5 Reproductive Mares and Jennets

Proper nutrition improves fertility and promotes normal growth and development of the fetus. The energy requirements of mares and jennets increase significantly during late gestation (i.e. the last three months) and are the greatest during early lactation (i.e. months 1-3).

There are advantages to including a small amount of concentrate (i.e. 0.5-0.75% of body weight) during late gestation (11):

- growth of the foal in late gestation can compress the mare's digestive tract, reducing the mare's/jennet's digestive capacity. Including concentrate will supply the energy needed while reducing the amount of hay she needs to consume
- concentrate may help meet the mare's/jennet's increased nutrient requirements when the nutrient content of hay is poor
- it can help adapt the mare/jennet to increased concentrate feeding during lactation.

REQUIREMENTS

Pregnant and lactating mares/jennets must receive a diet that is adequate for maintaining health and vigour and that allows the mares/jennets to provide adequate nutrition to the foal.

RECOMMENDED PRACTICES

a. consult a nutritionist or veterinarian to ensure the nutrient requirements that are of concern during pregnancy and lactation are met (e.g. calcium, phosphorous and micronutrients) (11)
b. ensure mares/jennets are fed a diet with sufficient protein (11% during late gestation; 13.5% in early lactation [months 1-3]; 11% in late lactation [months 4-6]) (11)
c. supplement with concentrate when: energy needs increase (late gestation and lactation), the mare/jennet needs to improve body condition, or if the nutrient content of hay is poor
d. ensure any increase in concentrate is done gradually over 7-10 days to prevent digestive upset
e. divide the concentrate into at least two meals and avoid feeding more than 0.5-0.6kg (1.1-1.3lbs) of concentrate per 100 kg (220lbs) of body weight in any single feeding.

3.4.6 Geriatric Horses

Geriatric horses (see glossary) will typically consume 1.5-2% of body weight in feed to meet their daily maintenance needs (12). Good quality forage is generally a good sole maintenance feed source provided the teeth are in good condition (12). Dental disease is common in geriatric horses and can result in slower eating, inadequate chewing and/or refusal to eat due to pain. Some geriatric horses may need specialized rations (refer to *Section 4.3-Dental Care*).

Weight loss or failure to maintain appropriate body condition in the face of perceived adequate feeding strategies are common problems in geriatric horses (12). **However, old age itself is not a cause for weight loss**. Therefore, owners need to make an effort to determine the cause and take corrective action. **Euthanasia may be necessary on welfare grounds if appropriate corrective actions fail to result in an increase in body condition above the minimum acceptable score**. Refer to *Section 4.5-Body Condition Scoring*.

Causes of weight loss or poor body condition in geriatric horses, include (12):

- underfeeding or giving feeds of insufficient nutritional content
- reduced feed intake (e.g. due to competition for feed)
- inability to eat (e.g. due to painful dental problems)
- lack of appetite due to health conditions
- increased nutrient requirements (e.g. due to health conditions)
- parasitism.

REQUIREMENTS

Geriatric horses must receive a diet that is adequate for maintaining health and vigour.

Refer to* Section 4.5-Body Condition Scoring *for other relevant Requirements.

RECOMMENDED PRACTICES

a. have a veterinarian perform a dental examination on geriatric horses at least annually
b. work with a nutritionist or veterinarian to establish a feeding program for geriatric horses
c. monitor the weight and body condition score of geriatric horses regularly - identify animals that are too thin or fat, ascertain the specific cause and employ effective strategies to correct the problem
d. ensure geriatric horses have sufficient access to feed (e.g. increase the number of feed locations or the amount of feed space at any single location, rearrange the groups such that competition is minimized)
e. ensure changes to the type or quantity of feed are done gradually over 7-10 days to avoid gastrointestinal upset.

4 Health Management

4.1 Health Management Plans

The health of horses, donkeys and mules is a key component of their welfare. Horses should be regularly assessed for health and fitness relative to any work or activity they perform. Owners and managers should maintain the health of their animals through appropriate nutrition and housing and disease prevention, detection, and treatment. Veterinarians should be involved in helping meet these animal health obligations. Depending on the circumstances, it may only be possible to seek veterinary advice via phone or other contact.

A Veterinarian-Client-Patient Relationship (VCPR) is the basis for interaction among veterinarians, their clients and their clients' animals. The exact definition for a VCPR varies between provinces, but generally the relationship has been established when the veterinarian has examined the animals or visited the farm (to gain a close knowledge of the health status and management of the animals); the veterinarian has assumed responsibility for making clinical judgments related to the health of the animals; and the client has indicated a willingness to follow the veterinarian's instructions.

Infectious Disease and Biosecurity

Health management plans (which include biosecurity and vaccinations) reduce the risk of introduction or spread of infectious diseases. Biosecurity protocols are guidelines intended to prevent the introduction or spread of diseases within a farm or to other farms. Horses that are newly introduced or returning to the farm present the greatest risk of infectious disease. Biosecurity protocols should be in writing, especially on farms with a large number of horses.

For some diseases, a horse can be a carrier of the disease without showing signs. These carrier animals can play a significant role in disease transmission. Infectious diseases can also be transmitted by people (e.g. via clothing or footwear); other animals (e.g. dogs and wildlife); and objects not adequately cleaned and disinfected (e.g. tack, grooming equipment, halters, water buckets and trailers). *Appendix K* provides several resources to assist with biosecurity planning.

Medications

Medications, especially prescription medications, should not be administered unless under the advice of a veterinarian. Some medications or remedies may be ineffective or even unsafe. These include: natural and herbal remedies; supplements, medications that are unlabeled, untested or unregulated; and medications used in a way that differs from the originally intended and licensed use (i.e. extra-label). Regulated sources of medication include a veterinarian, pharmacy, veterinary pharmacy, and licensed animal medicines outlet. **Before administering any medication or remedy, read the label carefully and discuss its safety and proper use with a veterinarian**. It is also important to store medications correctly - this can affect their efficacy and safety.

REQUIREMENTS

Horses must be observed as often as required to maintain their health and well-being.

Purchase medications and veterinary pharmaceuticals from regulated, reputable sources. Refer to provincial and federal regulations.

Records or receipts of treatments provided must be available.

RECOMMENDED PRACTICES

a. establish a working relationship with a practicing veterinarian (VCPR). In the case of feedlots, it is a requirement to have a VCPR in place
b. work with a veterinarian and other experts to develop a written health management plan and review the plan in advance of making major changes to the farm
c. include the following in your health management plan:
    - protocols for biosecurity
    - protocols for the prevention, detection and treatment of disease
    - protocols for pest and insect control
    - vaccination and deworming schedules
    - staff training
    - veterinary contact information for emergencies
d. use veterinary products that are approved by Health Canada and have a valid Drug Identification Number (DIN)
e. ensure treatment records include a record of the animal(s) treated, date, reason for treatment, dosage, withdrawal time, if applicable, and any adverse reactions
f. schedule regular preventive care veterinary visits to minimize emergencies
g. outline criteria for when to call a veterinarian
h. obtain veterinary advice on appropriate treatment for diseases
i. ensure a competent handler is present during a veterinary visit
j. inspect stabled or group housed horses at least twice a day for health and well-being; observe horses on open range or pasture on a routine basis
k. assess the horse's health and fitness for work/competition on a routine basis. *Appendix K* provides a resource on assessing fitness for competition
l. segregate new arrivals from resident horses for at least seven days and monitor their health status.

4.1.1 Pest and Insect Control

Controlling pests and flying insects is an important component of an overall health management plan. Pests and insects can transmit diseases and cause discomfort.

RECOMMENDED PRACTICES

a. implement procedures to monitor and control pests. The ideal program prevents the entry of wildlife and pests where horses are housed and eliminates sites on the farm that provide shelter and food for pests
b. protect horses from excessive insect burden (e.g. stable horses at sunrise and sunset, the peak insect feeding hours; apply repellant products to the horse; use a fly sheet)
c. implement protocols to reduce insect breeding sites (e.g. remove or cover manure piles, mosquito control in water troughs and standing water).

4.1.2 Vaccinations

Vaccinations offer horses protection from some infectious diseases, but do not completely eliminate disease risk. Good overall management directed at infection control remains important even for vaccinated horses. Vaccination guidelines vary by region and should take into account the risk for exposure. While there are costs associated with vaccines, those costs are generally much lower than the costs associated with an infectious disease.

Appendix K provides a reference to the vaccination guidelines of the American Association of Equine Practitioners.

RECOMMENDED PRACTICES

a. consult a veterinarian to develop a vaccination program, including correct on-farm storage and administration of the vaccines
b. ensure broodmares receive regionally appropriate vaccines
c. ensure foals are properly immunized with primary and booster vaccines as this affects their response to vaccines later in life
d. keep a record of the vaccinations that were administered (i.e. a record identifying the animal(s) vaccinated, date and any adverse reactions)
e. know the vaccination status of new arrivals and ensure they are properly vaccinated.

4.1.3 Parasite Management

While *Section 4.1.3* focuses on internal parasites, external parasites (e.g. lice and ticks) also affect horses. A veterinarian should be consulted for advice on controlling external parasites.

Control of internal parasites is key to maintaining feed efficiency and horse health (3). Signs of severe parasitism include poor body condition, rough hair coat (especially in foals), weight loss, mild to moderate abdominal distension ("pot-bellied" appearance), colic, diarrhea and stunted growth. Foals and geriatric horses are particularly susceptible to internal parasites as are horses with lowered immunity (3).

Research shows that parasite resistance to several dewormers may be related to the traditional approach of deworming all horses every 6-12 weeks with rotating products (3). A more effective alternative may be targeted treatments based on the worm burden specific to individual horses and farms combined with effective pasture management (3). Fecal examination for parasite eggs is an important component of a parasite control program but results must be interpreted based on a thorough understanding of parasite life cycles. For example, immature (larval) stages of worms can cause disease before egg shedding is detected.

Parasite control programs will vary but may include the following (3):

- fecal examinations (to identify worm burden and estimate levels of shedding of strongyle eggs of individual horses)
- regular deworming of all horses or targeted treatments of horses known to have a high parasite burden
- fecal egg count reduction tests (to assess the efficacy of individual drugs used)
- good pasture management (e.g. prompt manure removal, composting to kill parasite eggs, pasture rotation).

REQUIREMENTS

A parasite control program to prevent parasite related disease must be in place. This Requirement applies to internal and external parasites.

RECOMMENDED PRACTICES

a. consult a veterinarian to develop a control program for internal parasites. The plan should take into consideration risk factors such as the age of the horse; stocking density; the presence of drug-resistant parasites; seasonal and geographical factors; and additional management practices such as pasture hygiene
b. consult a veterinarian to develop a control program for external parasites
c. ensure records of parasite treatments include a record identifying the animal(s) treated, date, dosage and any adverse reactions.

4.2 Sick, Injured or Compromised Horses

The list of topics covered in *Section 4.2* (including *4.2.1* and *4.2.2*) is not exhaustive but provides information on topics that are particularly relevant to horses.

It is essential that those responsible for horse care be able to recognize normal behaviour, signs of sickness or injury and have basic knowledge of first aid for horses. It is important to frequently check horses carefully in order to identify problems that may not be apparent from a distance. These inspections can be done during feeding or other chores.

The most common signs of illness include:

- change in the horse's behaviour (e.g. lethargic, depressed, anxious)
- reduced feed intake
- change in water intake
- change in consistency of manure
- unexplained change in weight (loss or gain)
- signs of pain or discomfort (e.g. reluctance to move, increased rate of respiration and sweating)
- signs of colic (see *Section 4.2.1*)
- lameness
- swelling
- discharge from the eyes, ears or nose
- coughing or difficulty breathing
- fever (see *Appendix C-Vital Signs in Horses and Donkeys*).

Compared to horses, donkeys and mules are stoic animals and are less likely to show behavioural signs indicative of illness. In donkeys and mules, a reduced or loss of appetite is a significant concern.

Take action immediately if any horse is injured or appears ill or distressed. If you are in doubt about the horse's health or the most effective treatment, consult a veterinarian without delay.

REQUIREMENTS

***Equines that are sick, injured or in pain must receive appropriate treatment without delay or be euthanized without delay. Refer also to* Section 10-Euthanasia.**

For sick, injured or compromised horses that are not showing improvement, horse owners or caregivers must, without delay, obtain veterinary advice on appropriate care and treatment or make arrangements for euthanasia.

Records or receipts for treatments provided must be available.

Appropriate authorities must be advised of suspected or confirmed cases of federally reportable disease, such as Equine Infectious Anemia. Refer to the Canadian Food Inspection Agency (www.inspection.gc.ca).

RECOMMENDED PRACTICES

a. learn how to take a horse's vital signs. Refer to *Appendix C-Vital Signs in Horses and Donkeys*
b. consult a veterinarian when vital signs are abnormal for an unknown reason or when a horse shows signs of illness
c. post veterinary contact information, including after-hours contact, where staff will easily see the information
d. know in advance the route to the nearest veterinary hospital and have a plan in place for transport (refer to *Section 8-Transportation*)
e. keep a first-aid kit on farm and in the transport vehicle. Ensure staff know its location and how to use it

f. consult an experienced horseperson or other expert for advice on safe restraint when treating a horse and provide an appropriate means of restraint when a veterinarian attends the horse
g. have sheltered, segregated and well-bedded sick pens/stalls for horses that are sick, injured or recovering
h. have isolation facilities available on the farm
i. monitor sick, injured and/or recovering horses at least twice daily
j. ensure treatment records include a record of the animal(s) treated, date, reason for treatment, dosage, withdrawal time, if applicable, and any adverse reactions
k. assign responsibility for health management decisions to a competent individual if you will be away from the farm for an extended period.

4.2.1 Colic

Colic is a sign of a painful condition in the horse's abdomen. While episodes of colic vary in their severity, every case should be taken seriously.

The most common signs of colic are:

- repeated lying down, rolling and getting up, or attempting to do so
- turning the head toward the flank; kicking or biting at the belly; pawing at the ground
- stretching out as if to urinate, without urinating
- depression and/or loss of appetite
- diarrhea or any change in manure output
- sweating with minimal physical exertion.

To reduce the risk of colic:

- provide safe, palatable and clean water at all times
- maintain a consistent daily schedule for feeding, exercise and turnout
- feed a high quality diet comprised primarily of forage (limit the amount of grain-based feeds)
- divide the daily concentrate ration into two or more meals
- avoid putting feed directly in contact with the ground especially on sandy soils (3)
- ensure feed sources are free from mould and spoilage
- maintain a parasite control program in consultation with a veterinarian.

4.2.2 Communicable Diseases

Infectious Respiratory Diseases

Young horses and horses that commingle with others (such as at a horse show or if living in high-traffic barns) are at particular risk for respiratory infections, such as influenza, rhinopneumonitis and strangles. These infections can be spread in the air, by nose-to-nose contact or by contaminated hands, clothing, equipment and tools (e.g. feed buckets, water troughs and grooming tools). With some diseases, the infection can be spread by horses not showing clinical signs.

Signs include fever, lethargy, nasal discharge, cough and swollen lymph nodes under the jaw (especially with strangles). Testing is often necessary to obtain a definitive diagnosis. The time between exposure to infection and the occurrence of signs (known as the incubation period) varies from a few days to two weeks. Prolonged rest periods after infection are often needed to prevent chronic problems. While many horses recover uneventfully if managed properly, some horses can develop life threatening complications. **Horses showing signs of respiratory infection should be strictly quarantined and should not be worked until a diagnosis and a treatment/management plan have been established**.

Equine Infectious Anemia (EIA, Swamp Fever)

Equine Infectious Anemia (EIA) is a contagious viral blood borne disease. The most common signs are fever and anemia; however, horses can appear healthy but still be carriers of the infection. The most common source of infection is other horses via blood feeding insects. Transmission may also occur via contaminated instruments (e.g. needles) or transfusions of untested blood or blood products.

There is no licensed vaccine or treatment for EIA. **In order to prevent the spread of EIA, testing is strongly encouraged, particularly in areas where there are known cases**. Infected animals are identified by a positive blood test (the official test is known as the Coggins test). A negative EIA test is required for export of horses and to enter many competitions and stables. EIA is a federally reportable disease - all suspected or confirmed cases must be reported to the Canadian Food Inspection Agency (CFIA). **Horses that are confirmed EIA carriers must either be euthanized or kept in permanent quarantine in accordance with CFIA protocols**. Refer to *Appendix K-Resources for Further Information*.

RECOMMENDED PRACTICES

a. isolate a horse with a suspected or confirmed communicable disease, get a diagnosis, provide treatment and alert any owners of horses that may have come in contact with that horse.

4.3 Dental Care

Most dental conditions are painful and lead to other welfare issues, such as weight loss. Horses should have their teeth examined at least annually and receive appropriate dental care as needed (e.g. teeth floating). Young and old horses, as well as those with dental problems, may need to be examined more frequently. Proper dental care helps horses eat better, perform better and be healthier.

Signs of dental problems include:

- unexplained weight loss
- quidding (dropping feed while chewing)
- reluctant or slow to eat
- unusual tilting of the head while chewing
- unusually high amounts of long fibres in the manure
- resistance to the bit or bridle due to pain
- swelling in the cheeks or the upper or lower jaw
- excessive salivation (drooling or slobbering)
- unpleasant odour from the mouth or nostrils.

REQUIREMENTS

Horses showing signs of dental problems must be examined and treated.

Dental care procedures must only be performed by a veterinarian or competent individual working under direct veterinary supervision. Refer to provincial regulations.

RECOMMENDED PRACTICES

a. have a dental examination done at least annually or as frequently as may be needed for individual horses. In particular, broodmares, foals, geriatrics and horses entering training should be examined for dental abnormalities
b. observe horses regularly for signs of dental problems.

4.4 Lameness

Lameness is a significant welfare concern. For the purpose of this Code, it is defined as any alteration in the horse's gait that appears to be caused by pain or discomfort. Lameness can manifest as a change in performance or willingness to move, head nodding or hip hiking. Gait can be evaluated from a walk, moving in a straight line and turning in both directions; a trot may be necessary if the lameness is less severe (3).

Identifying the source of the lameness is essential to proper treatment. Prompt examination and diagnosis improves the welfare of the horse and can save time and money and prevent further damage (refer also to *Section 6.7-Hoof Care* and *Section 9-Change or End of Career*).

There are various forms of treatment for lameness, including rest, medication, surgical procedures, corrective trimming and shoeing, rehabilitation exercises and pain management. Pin firing is **not** recommended for treating lameness - the procedure itself causes pain and there is very little scientific evidence that shows that pin firing is beneficial (3,13).

REQUIREMENTS

Lameness must be addressed either through specific therapies or changes in management or workload.

RECOMMENDED PRACTICES

a. reduce the risk of lameness by:
   - considering the horse's physical condition and soundness when determining the type and amount of work the horse will be asked to do
   - ensuring immature horses are not worked or trained excessively
   - providing horses with adequate rest periods between work sessions
   - ensuring good footing in exercise and turnout areas
   - ensuring regular hoof care
   - allowing low-grade injuries to heal by giving horses appropriate lay-ups (longer rest periods)

b. obtain a veterinary diagnosis of the cause of lameness and veterinary advice on appropriate treatment.

4.4.1 Laminitis (Founder)

Laminitis is a serious condition that causes inflammation in the foot that may result in severe pain, abnormal foot growth and lameness. If untreated or if treatment is unsuccessful, laminitis can lead to permanent structural changes in the foot, gait abnormalities and continual or recurrent bouts of foot pain (3). **The pain from laminitis can become severe enough to necessitate euthanasia on humane grounds** (3).

Known or suspected causes of laminitis include grain overload, obesity, severe infections (such as severe diarrhea), Equine Metabolic Syndrome, "Equine Cushings" (PPID, see glossary) and excessive concussion of the hooves. Diet plays a key role in triggering laminitis, particularly the consumption of pasture or feeds high in simple sugars, starches and fructans (3).

Signs of acute laminitis include:

- lameness (including a cautious, stilted gait)
- increased heat in the feet and/or a bounding pulse in the feet (felt at the pastern or fetlock)
- shifting weight to the hind end and front feet stretched out
- reluctance to pick up the feet.

REQUIREMENTS

Horses with laminitis must receive appropriate lifelong management and treatment, which may include medications, dietary management and hoof care.

RECOMMENDED PRACTICES

a. reduce the risk of laminitis through the following strategies:
   - do not let horses get too fat - ensure they are at an ideal body condition score and are not overfed relative to their energy needs (3) (refer to *Section 4.5-Body Condition Scoring*)
   - ensure any changes to the diet are gradual
   - restrict at-risk horses from grazing on lush pasture (i.e. plentiful, bright green grass) (3)
   - store grains securely such that horses cannot gain access. **In the case where a horse gains unrestricted access to grain, call a veterinarian immediately - do not wait for signs of laminitis to appear**

b. consult a veterinarian to determine special care that may be needed for a horse that has had laminitis. Horses that have had laminitis are at increased risk of developing the disease again and the condition can become chronic

c. ensure communication between the veterinarian and farrier to determine whether corrective trimming or therapeutic shoeing may be needed.

4.5 Body Condition Scoring

Body condition scoring (BCS) is a tool for determining if an animal is too thin, too fat or in ideal condition. In order to be done correctly, BCS involves both a physical palpation and visual assessment of specific anatomical sites that are most responsive to a change in body fat.

Appendix D provides the 1-9 scale for body condition scoring horses and ponies. *Appendix E* provides the 1-5 scale for body condition scoring donkeys and mules. **For the purpose of this Code, all body condition scores refer to the scales shown in either** *Appendix D* **or** *E*.

Be aware of the following when evaluating BCS:

- as horses increase BCS, they appear thicker and more solid; as donkeys and mules increase BCS, they get lumps of fat under the skin
- Thoroughbred conformation naturally has more prominent withers and back; the conformation of ponies and draft breeds is naturally more fleshy
- the flank and tail head area may be less reliable sites when assessing the BCS of pregnant mares/jennets in late gestation (the weight of the foal makes the flank area appear thinner and hormone changes make the tail head area appear flatter)
- a thick winter coat can make a horse appear to be in better condition than it actually is. Palpation is essential to assess body condition.

Depending on the animal's purpose, breed and life stage, a BCS of 4 to 6 (out of 9) is recommended for horses, miniature horses and ponies. For mules and donkeys, a BCS of 3 (out of 5) is recommended.

Poor Body Condition

Excessively thin equines may be underfed, ill, heavily parasitized or have dental problems. Equines in poor body condition are less able to cope with cold temperatures - they should be given additional shelter and may not even tolerate living outside in the winter.

Excessive Body Condition

Obesity in equines is most often caused by allowing animals to overfeed. Horses that are fat (BCS 8) and extremely fat (BCS 9) are prone to overheating during warmer temperatures and experience strain to the legs and feet. Obesity is also a risk factor associated with laminitis (3). Overweight donkeys, ponies and miniature horses are at severe risk of hyperlipemia if starved; therefore, any feed restrictions to reduce BCS must be gradual.

BCS and Reproduction

Reproductive efficiency is maximized by maintaining broodmares at a BCS of 5 to 7 throughout breeding, gestation and lactation (14,15). Mares that are too thin (BCS<5) at the beginning of the breeding season or at foaling have lower conception and pregnancy rates. They are also at risk of excessive weight loss at lactation. Increasing the energy fed to thin mares during lactation can improve rebreeding efficiency. An excess store of body fat (BCS 7) at foaling is not associated with foaling problems (16).

Horses in Work

Inadequate or excessive body condition adversely affects performance of horses doing physical, competitive work. Horses at a BCS>6 doing moderate to hard work may need more time to recover compared to horses at a BCS of 5 (17). A working horse that is too thin (BCS<4) may not have sufficient stored energy reserves for the work period (16,18).

Refer also to *Section 3-Feed and Water* and *Appendix K-Resources for Further Information.*

REQUIREMENTS

***For horses and ponies: corrective action must be taken at a BCS of 3 or lower and at a BCS of 8 or higher (on the 1-9 scale).* Veterinary advice must be obtained if animals do not respond to the corrective action. Refer to* Appendix D.**

***For donkeys and mules: corrective action must be taken at a BCS of 2 or lower and at a BCS of 4 or higher (on the 1-5 scale). Veterinary advice must be obtained if animals do not respond to the corrective action. Refer to* Appendix E.**

Veterinary advice must be obtained for geriatric equines that are emaciated (i.e. BCS of 1 or 2 out of 9 for horses and ponies; BCS of 1 out of 5 for donkeys and mules).

Equines must not be starved or prevented from eating for prolonged periods in order to reduce BCS - the change in feed to reduce BCS must be gradual.

****With the exception of horses in feedlots that are free from health conditions associated with obesity.***

RECOMMENDED PRACTICES

a. use Appendices D and E to regularly assess BCS
b. aim for the following ideal BCS ranges for horses:
    - weanlings and foals, 4 to 5
    - broodmares (throughout breeding, gestation, and lactation), 5 to 7
    - stallions (at the beginning of the breeding season), 5 to 7
    - work and performance horses (farm work, racing, endurance), 4 to 6
c. keep records - identify animals that are outside their ideal BCS range, ascertain the cause, and take corrective action.

To increase BCS to an ideal level:

a. seek advice from a nutritionist, knowledgeable, experienced horseperson or veterinarian
b. ensure the increase in energy intake does not exceed 10-15% per week (4)
c. put the horse on a weight gain program that first involves an increase in forage before concentrates are added (4)
d. provide "poor doers" with forage containing high digestible energy and additional energy in the form of concentrates, including added fat.

To reduce BCS to an ideal level:

a. seek advice from a nutritionist, knowledgeable, experienced horseperson or veterinarian
b. ensure the decrease in energy intake does not exceed 10-15% per week (4)
c. put the horse on a weight loss program that first involves the reduction/elimination of concentrate (3). A reduction in energy intake should be accomplished without decreasing total daily dry feed intake below 1.5% of ideal body weight
d. provide a more mature hay to an "easy keeper" that is maintained on a hay diet (3)
e. increase the horse's activity level. Any such increase should be gradual
f. prevent overeating (e.g. limit pasture access; keep the horse on a dry lot for part of the day; use a grazing muzzle) (3).

5 Feedlot Management

Feedlots are centralized feeding operations where animals are fed concentrated feed mixtures to efficiently reach a target weight prior to slaughter. *Section 5-Feedlot Management* outlines the additional requirements and recommended practices that apply specifically to the feedlot industry. Consult other sections of this Code, which also apply to the feedlot industry, unless otherwise specified.

5.1 Handling at Loading and Unloading

Properly designed facilities are key to low-stress handling. The ground in the holding pen must be well-drained and non-slip as horses can become injured when they slip or fall. Examples of non-slip surfaces include sand, dirt (but not mud) and stamped or grooved concrete. Refer also to *Section 6.2-Behaviour and Handling* and *Section 8.2-Loading and Unloading.*

With proper handling, animals experience less stress and fear, and the risk of injury to the handler and the animals is greatly reduced. Handling should accommodate the animal's behaviour and should be done in a calm manner. Refer to *Appendix G.*

REQUIREMENTS

The ground in the holding pen must be well-drained and non-slip.

Horses must be handled in a manner that does not subject them to avoidable pain or avoidable injury.

RECOMMENDED PRACTICES

a. ensure temporary holding pens (i.e. pens that horses are held in for less than 24 hours) allow a minimum of 7.6-9.1m^2 (25-30ft^2) of area per horse (19)
b. ensure gates, alleyways and holding pens are smooth and free from protrusions
c. build alleyways to the same height and spacing as corral and pen fencing (1.7-1.8m [5.6-5.9ft] high and to a width of 3.7-4.9m [12-16ft]) (19)
d. build single file chutes that have the following: solid sides; a minimum width of 81cm (32in); a minimum height of 1.8m (6ft); and a gap of approximately 30cm (12in) at the bottom to allow for drainage (19).

5.2 New Arrivals

Horses arriving at feedlots come from a variety of backgrounds and with varying degrees of training or no training at all; therefore, they should be handled calmly and with caution (19). New arrivals may be tired, hungry, thirsty and stressed due to transport, mixing with unfamiliar animals and new surroundings (20).

REQUIREMENTS

Upon arrival to the feedlot, horses must be individually assessed for health and well-being and must be provided with water and good quality forage.

Horses in groups must be managed in a way to minimize the risk of injury.

RECOMMENDED PRACTICES

a. ensure feed and water is easy to find as new arrivals will not be familiar with its location and may only be familiar with natural water sources
b. monitor new arrivals at least twice daily to ensure they are healthy and are eating and drinking
c. segregate groups of new arrivals from groups of resident horses for at least seven days
d. segregate horses into groups according to age, sex and size
e. remove shoes from shod horses arriving to the feedlot.

5.3 Feeding

Feedlot horses can be fed a ration of 60-70% grain; however, overfeeding grain without gradual adjustment is associated with laminitis and other health conditions.

REQUIREMENTS

Feedlot horses must receive a diet that is adequate for maintaining health and vigour.

Feedlot horses must have daily access to forage that is free from visible mould and has minimal dust.

RECOMMENDED PRACTICES

a. introduce horses to the feedlot ration gradually over a minimum of 30 days and preferably 60 days
b. consult with a nutritionist or veterinarian to develop a feed management plan
c. provide continuous access to forage
d. ensure feedlot horses have sufficient feed space (e.g. increase the number of feed locations or the amount of feed space at any single location, rearrange the groups such that competition is minimized).

5.4 Health Management in the Feedlot

Health management and disinfection are particularly important in feedlots. Refer also to *Section 4-Health Management*.

REQUIREMENTS

Feedlot owners must establish and maintain a Veterinary-Client-Patient Relationship (VCPR) with a practicing veterinarian.

A written biosecurity and disease management plan must be in place and developed with a veterinarian.

Feedlot horses must be observed at least once a day for health and well-being.

Feedlot horses requiring medical treatment must receive such treatment and be identified. Feedlot horses to be held over for a drug residue withdrawal period must be sufficiently healthy and sound to withstand this period without undue suffering.

Records or receipts of treatments provided must be available.

Drug withdrawal periods must be observed. For information on drug withdrawal periods, consult a veterinarian or the Meat Hygiene Manual of Procedures (*Appendix K *provides a reference for this manual).

Hospital pens must be available and must provide shelter, bedding, dryness, and a source of feed and water. Hospital pens must also be cleaned between uses.

***Refer also to the Requirements in* Section 4-Health Management.**

RECOMMENDED PRACTICES

a. build hospital pens that can be easily cleaned and disinfected
b. situate hospital pens such that contact is not possible between horses in adjoining pens (21)
c. ensure hospital pens are at least 4.88m (16ft) from pens used by healthy animals (21)
d. segregate animals immediately if they show signs of illness.

5.5 Pen Condition and Shelter

Mud management is especially important in the feedlot and can be a challenge, particularly during certain seasonal conditions (e.g. before winter freeze). The following factors contribute to poor pen condition: insufficient bedding, poor drainage and overcrowding (22). Good mud management includes having well-drained sites, appropriate stocking density, shelter and a routine schedule for bedding changes and removal of manure. In high rainfall areas, it may be very difficult to achieve the Requirements below without the provision of overhead shelter.

Muddy conditions negatively impact on horse welfare and weight gain in the following ways:

- dirty and wet coat condition will lower the insulation capacity of the hair coat and may increase energy needs of the animal for maintenance (3)
- the animal will have reduced feed intake if reluctant to venture through muddy conditions to reach feed bunks (22)
- more energy is required for the animal to pull its hoof out of the mud or to spend more time standing if uncomfortable lying in the mud (22).

REQUIREMENTS

Feedlot owners must have a plan for mud management and access to any equipment necessary to implement the plan.

A dry lying area must be available in each pen.

RECOMMENDED PRACTICES

a. ensure there are solid, non-slip surfaces around feed and water sources
b. ensure drainage is away from the feeding and watering areas and at a slope of between 2 and 4%
c. clean pens seasonally or more often as needed for individual facilities
d. ensure bedding is kept clean
e. provide protection from wind, such as a three-sided shed or wind-break fencing (20% porosity).

5.5.1 Stocking Density

Horses are social animals that establish a hierarchy within a group. The risk of injury to horses increases when they are overcrowded and competition for food, water and space leads to aggression.

REQUIREMENTS

At a minimum, each horse must have enough space to move easily, walk forward, turn around with ease and lie down in a normal resting posture. There must also be sufficient space for subordinate horses to escape aggression.

6 Husbandry Practices

6.1 Turnout, Exercise and Social Opportunities

For the purpose of this Code, turnout means allowing horses "free time" (i.e. not under controlled exercise) in a dry lot, arena, pen or pasture. Turnout does not necessarily mean the horse is grazing. Exercise refers to physical activity (indoors or outdoors) and includes, but is not limited to, walking in-hand, riding, lunging and hand grazing. Social opportunities refer to occasions when horses can interact with other horses via sight, sound and/or direct contact (3).

Horses are highly adaptable to many weather conditions (3) - keeping them outdoors or giving them frequent outdoor access is encouraged. There are several advantages to providing horses with turnout and social opportunities. Research shows that horses with turnout time have greater bone density than those that are strictly stalled (3). Horses with increased turnout and social opportunities have also shown themselves easier to train and handle (3). If given ample social opportunities (either turned out with other horses or group housed), horses learn training tasks more efficiently and perform fewer undesirable behaviours (e.g. biting, kicking, bucking) compared to stalled horses (3). For a small percentage of horses, turnout may bring a risk of injury (depending on their temperament and whether they are accustomed to turnout). These horses may need to be transitioned to turnout over a period of time (e.g. transition from a stall to a small paddock and then to pasture).

REQUIREMENTS

Horses must have some form of exercise or turnout unless under stall rest for medical reasons or severe environmental conditions make this temporarily impossible. Refer to the above explanations for the terms exercise and turnout.

RECOMMENDED PRACTICES

a. turn horses out with other horses or other equine companions (3)
b. allow daily exercise or turnout opportunities, ideally outdoors and with foraging opportunities
c. build or renovate facilities to allow ample social opportunities (e.g. group housing or stall design that allows horses to have visual or tactile contact with other equines)
d. provide stall-bound horses with continuous access to enrichment devices (e.g. trickle feeders, nibble nets, horse toys).

6.1.1 Stereotypies

A stereotypy (formerly referred to as a vice) is an abnormal behaviour that serves no apparent function and is performed in a repetitive, invariant way (3). Common examples include weaving (side-to-side swaying of the head, neck and forequarters); cribbing/wind-sucking (the horse grasps an object with its teeth and makes a grunting sound); and stall-walking (circular or patterned route-tracing inside the stable). Wood chewing, not usually classified as a stereotypy, involves stripping and apparently ingesting wood surfaces (3).

Working to prevent stereotypies is generally more effective than trying to "cure" the behaviour once developed. Stereotypic behaviour is most appropriately addressed via management changes that address the underlying cause of the stereotypy (3). Suggestions include providing ample forage and allowing stalled horses to have visual and tactile contact with other equines. Preventing the horse from performing the stereotypy without addressing its cause may lead to further stress, frustration, and the emergence of other stereotypies (3). A horse may continue to perform stereotypies even after the predisposing factors have been addressed (3). **This does not necessarily indicate their current welfare status is poor** (3).

RECOMMENDED PRACTICES

a. minimize the risk of stereotypies by ensuring horses have ample turnout time and ample opportunities to forage and engage in social opportunities with other equines (these factors seem to be associated with equine stereotypies) (3)
b. for horses with stereotypies: strive to address the underlying cause of the stereotypy (rather than physically preventing horses from performing the behaviour) (3).

6.2 Behaviour and Handling

Section 6.2 is particularly relevant to handling groups of horses or single horses not on halter. Handling should be based on the concepts of field of vision, flight zone and point of balance. Refer to *Appendix G*.

With proper handling, animals experience less stress and fear, and the risk of injury to the handler and the animals is greatly reduced. Handling should accommodate the animal's behaviour and should be done in a calm manner.

Horses evolved as prey species and have a strong fight-or-flight response. When frightened, horses will generally flee. If they feel they cannot flee, they may become aggressive. Compared to horses, donkeys and mules are less likely to flee when frightened. Instead, they tend to study the situation before reacting (this is often incorrectly interpreted as stubbornness).

Horse welfare and handler safety is improved when handlers respond promptly to signs of fear and agitation in horses. Some examples include:

- tail swishing/wringing, in the absence of flies
- the whites of the eyes are more visible
- sweating with minimal physical exertion
- flared nostrils or wrinkling at the mouth or nose
- both ears laid flat back
- pawing or striking
- running away from or charging at the handler
- vocalizations (e.g. snorting, squealing, calling)
- head held very high
- kicking or turning the hindquarters towards the handler.

REQUIREMENTS

Handlers must be familiar with equine behaviour and competent in humane handling techniques either through training, experience or mentorship.

Horses must be handled in a manner that does not subject them to avoidable pain or avoidable injury.

RECOMMENDED PRACTICES

a. understand and apply the concepts of field of vision, flight zone, and point of balance (refer to *Appendix G*)
b. avoid sudden actions or noises that may startle or frighten horses. Horses have sensitive hearing
c. provide adequate lighting so that horses do not baulk at shadows or poorly lit areas
d. approach an unfamiliar horse carefully and at the shoulder (not the rear). Generally, horses are accustomed to riders/handlers approaching, mounting and leading on the left side of the horse.

6.2.1 Handling and Restraint Equipment

Equipment used for restraint and handling should be effective without causing stress to the horse and should be designed for maximum safety of the handler and horse. Any restraint method used to assist normal management or treatment of the horse should be the most mild and effective method available, and should be applied for the minimum amount of time necessary to carry out the task.

A halter and lead rope is the most common form of restraint. Generally, the safest knots are those that can be quickly untied even if the horse has pulled on it. When used by knowledgeable handlers, other acceptable forms of restraint include hobbles, twitches, lead chains, stocks and chutes.

Tethering is a form of restraint that brings a high risk of injury to horses unless used correctly. For the purpose of this Code, tethering means attaching a long rope or chain to the halter or leg hobble so the horse can graze. Tethering does not refer to tie stalls or briefly tying a horse to a fixed object.

Refer to *Appendix K* for other resources on handling and restraint equipment.

REQUIREMENTS

Corrective action must be taken if restraint devices or equipment cause injury to horses.

Tethering must not cause injury and must only be used if the horse is under supervision. The person applying the tether must be knowledgeable in its use. Refer to the above explanation of tethers.

Electric cattle prods must not be used for the routine movement or handling of horses on-farm or during loading/unloading. Discretion must be used in an individual extreme situation when animal or human safety is at immediate risk, but prods must never be used repeatedly or used on the face, anus or reproductive organs of horses.

RECOMMENDED PRACTICES

a. use properly designed and maintained restraint devices in the manner they were intended to be used
b. do not turn horses loose in a pasture or stall with a halter on unless the halter has a break-away design
c. ensure handling equipment is engineered to minimize noise. Loud noises are disturbing to horses
d. ensure chutes used to restrain horses have break-out walls to assist horses that go down during handling.

6.3 Principles in Training and Learning Theory

Training is an important investment in a horse, and the level of training (from basic skills to specialized work) will depend on the intended purpose of the horse. Horses well trained in ground skills, under saddle skills and/or in harness skills are safer to work with and more likely to have good welfare their entire life (3). Poor training methods can cause behavioural problems (3). Horses with behavioural problems are more vulnerable to neglect, rough handling and more likely to face the prospect of multiple temporary owners attempting to manage an untrained or poorly trained horse.

In training, the ideal is to make the "right thing easy and the wrong thing hard" for the horse. It is essential that horses be given a way to comply (i.e. respond in the way the trainer desires). Otherwise the horse is essentially in a "no win situation" and over time may show increased apathy or become dangerous and unemployable.

Tack and equipment must be maintained in good repair and must fit the horse correctly. Ill-fitting equipment may cause sores, irritation, and may also cause the horse to respond to the irritation rather than the handler.

Learning theory can be used to explain how horses learn, think and react during training. The following principles of learning theory can be applied to any training context: (23,3)

- use cues or aids that are easy for the horse to understand. Multiple cues or aids used together can confuse the horse, so it is essential that signals are applied clearly and consistently
- train and shape responses one-at-a-time. Each response should be broken down into its smallest possible components and then put together in a process called "shaping"
- train only one response per cue
- strive to minimize fear during training. When horses experience fear, they can come to associate everything about that environment with the fear, and fear can inhibit learning
- benchmark relaxation - observe the horse for aggressive or defensive behaviours and modify training methods to minimize them. Horses that stay relaxed during training are better able to learn
- include a system of reward to the training as it can make the task safer and easier for the horse and trainer (a reward does not have to be a food treat; wither scratching or the release of pressure are also good options)
- minimize the time between the performance of the horse's trained response and its reward. Horses do not learn well when there is a delay in reward.

For more information on learning theory, consult *Appendix K-Resources for Further Information*. The Scientific Committee report for the equine Code, listed in the References, also provides more detail.

REQUIREMENTS

Horses must not be trained in a manner that subjects them to avoidable pain or that causes them injury as a direct result of the training method used. They must never be subjected to training methods which are abusive or intentionally injure the horse. This includes, but is not limited to, soring, excessive use of whips or forcing the horse's head position by tying the horse to a fixed object. The glossary provides a definition of soring.

Horses must only undergo training that matches their physical capabilities and level of maturity.

Equipment in use must be maintained in good repair and must fit the horse correctly.

RECOMMENDED PRACTICES

a. consult an experienced trainer/coach and attend training clinics (exercise due diligence researching the qualifications of trainers/coaches and ask for references)
b. employ training methods that use the minimal force necessary to achieve the desired outcome
c. train in short sessions and space training sessions over time
d. ensure that, at a minimum, the horse is trained to lead, load into a trailer and stand for farriery, veterinary care and grooming (refer to *Section 8.2.1-Training to Load*)
e. ensure you are familiar with the correct use of all tack and training equipment and that you have an understanding of how to be certain that it fits the horse correctly
f. have a veterinarian examine the horse's mouth for any dental problems that may interfere with comfortable bitting and bridling.

6.4 Methods of Identification

Identification of horses is needed for reasons of animal and public health, proof of ownership, to ensure correct identification at competitions or shows, and when buying or selling horses. There are several methods of marking horses for identification or ownership, including permanent or temporary methods and methods that are visible or non-visible.

All methods of permanent identification cause some degree of pain to horses with the exception of the iris scan, which recently became available (3). Research shows that hot-iron branding is painful to horses (3). It leads to a skin burn that causes swelling and skin sensitivity for several days (3). Some studies comparing hot-iron branding to freeze branding suggest that freeze branding causes less pain and discomfort than hot-iron branding (3). The horse's response to microchipping, if any, is short lasting, compared to freeze or hot-iron branding (3). Lip tattooing is another means of identification; however, there is limited research on this.

Government and industry are encouraged to develop more humane identification methods for verifying ownership. Until a reliable form of permanent, visible marking is available, branding remains necessary in some sectors of the horse industry. However, hot-iron branding is strongly discouraged - if a permanent, visible mark is needed, freeze branding is recommended over hot-iron branding. When branding is necessary, it is critically important to use the correct technique. Refer to *Appendix K* for a reference on hot-iron and freeze branding.

REQUIREMENTS

Animal identification must be performed in a manner that causes the minimum of handling stress and pain, regardless of the method used.

If branding is necessary, do not brand horses on the jaw/cheek.

When registering new brands, select an approved site other than the jaw/cheek. Consult the appropriate provincial regulatory authorities, breed registry or sport council for more information.

Horses must never be branded when they are wet.

RECOMMENDED PRACTICES

a. choose the least painful method that fits the purpose for the identification. Horse owners are **strongly encouraged** to avoid hot-iron branding and re-branding of any kind
b. ensure that the method of identification is done by skilled personnel
c. ensure the horse has some previous experience with handling and restraint before the identification procedure is performed
d. discuss pain control options with a veterinarian, **particularly when branding**.

6.5 Castration

Horses are castrated to make them safer to handle, easier to manage, and easier to turn out in groups. In most provinces equine castration can only be done by a veterinarian. The Canadian Veterinary Medical Association (CVMA) regards castration of horses, donkeys and mules as a veterinary medical procedure which should only be performed by a veterinarian using appropriate surgical, anesthetic and analgesic techniques.

Castration is a surgical procedure that causes pain and inflammation that persists for several days (3,24,25). Veterinarians have formal surgical training to perform the procedure to a professional standard. Licensed veterinarians have access to drugs to reduce pain and inflammation. They also have access to sedatives and anesthetics which reduce the need for physical restraint and provide the optimal conditions for the procedure.

Equine castration should be performed by a veterinarian as it is a specialized procedure requiring considerable skill and expertise and has a high complication rate (3,24,25). Some complications (e.g. evisceration and hemorrhage) are potentially life-threatening (3,24). Castration of donkeys, mules and mature horses has an even higher risk of complication and must only be performed by a veterinarian.

Although equine castration by non-veterinarians may be exempt from certain provincial Veterinary Acts, this does not exclude non-veterinarians from being held accountable under animal protection laws if horses are put in distress by a non-veterinarian performing this procedure.

REQUIREMENTS

Castration of donkeys, mules and mature horses must only be performed by a veterinarian.

Horses with one or more retained testicle or other scrotal abnormalities (e.g. hernias) must only be castrated by a veterinarian.

Provincial regulations that restrict castration of horses to licensed veterinarians must be followed.

Where it is not prohibited by law, castration by a person who is not a licensed veterinarian must only be performed by a skilled operator and must meet the following requirements:

- ***there is a valid Veterinary-Client-Patient Relationship with a licensed veterinarian who is willing to supply training (on the procedure and pain management), prescribe the required drugs for pain control and provide interventions if needed***
- ***the scrotal area must be examined to ensure normal scrotal anatomy. If there is evidence of an abnormality, castration must only be performed by a veterinarian***
- ***the handling and restraint methods must not cause injury or unnecessary suffering***
- ***pain control must be provided. At a minimum, this must include a local anesthetic and a non-steroidal anti-inflammatory drug. Castration must not begin until the local anesthetic has taken effect***
- ***the horse must be monitored during and after the procedure and, if complications occur, a veterinarian must be contacted without delay.***

RECOMMENDED PRACTICES

a. horse owners are **strongly encouraged** to arrange for castration to be done by a veterinarian. Veterinarians can provide a combination of sedatives, anesthetics and analgesics along with optimal surgical care.

6.6 Alterations of the Tail

Tail docking involves the removal of part of the horse's tailbone, leaving it significantly shorter (3). Tail docking was originally done to prevent the tails from interfering with the harness equipment and machinery, impairing the driver's ability to control the horses and potentially causing the horses to bolt (3).

Depending on the amount of tail that is removed, docking can compromise the horse's ability to swish the tail at flies and communicate with other horses or humans (3). Tail docking can also lead to serious health risks, such as infections. Research in other species suggests that both surgical and rubber ring methods of tail docking are painful; however, this has not been studied in horses (3). Any potential safety benefit of tail docking has also not been scientifically studied in horses.

Tail nicking involves cutting the horse's tail muscle to achieve an artificially high tail carriage for show purposes (3). Horses that have undergone this procedure wear a tail brace during their show career and their ability to use their tail is compromised (3).

Tail blocking is a procedure whereby the major nerves of the tail are injected with a substance that affects the horse's ability to lift, swish or control its tail (3). This procedure causes the horse to temporarily lose the use of its tail for any function (3). It is also associated with serious health risks and complications.

REQUIREMENTS

Tail nicking and blocking are unacceptable and must not be performed.

Tail docking for cosmetic purposes is unacceptable and must not be performed. Refer also to provincial regulations on tail docking, if applicable.

6.7 Hoof Care

"No foot no horse" - regular hoof care is essential towards achieving overall horse health and longevity through hoof and leg soundness (26). **All equines, including donkeys and mules, need regular hoof care but not all equines will need shoeing**. Shoes are necessary when wear exceeds growth, or for correction of conformation or gait (3). Horse boots are a potential alternative to shoeing. Trimming to correct leg and hoof deviations is most effective when done as early as possible in the foal's life. All hoof and leg deviations worsen with neglect and excess growth (26).

Cleaning the foot is important, particularly to prevent thrush and to inspect the foot for any foreign materials that may cause injury (3). Thrush is an infection caused by bacterial and fungal yeast-type organisms (3). Signs of thrush include a foul odour and a black putty-like appearance of the frog (the frog is located at the heel of the foot and forms a "V" into the centre). Regular cleaning of the hoof prevents thrush from developing by aerating the exposed area (3). Refer also to *Appendix K-Resources for Further Information*.

Strategies to maintain the hoof health of horses (26):

- keep hooves free of defects through regular trimming and/or shoeing
- keep corrals clean, dry and free from mud
- provide adequate nutrition and exercise
- clean out hooves regularly, ideally on a daily basis, and before exercise or riding
- avoid extended use of hoof polishes
- use hoof moisturizers or hoof hardeners as needed.

REQUIREMENTS

Hooves must be trimmed and/or shod as often as is necessary to maintain hooves in functional condition. Whether shod or unshod, hooves must not be allowed to grow to excessive lengths causing injury or discomfort to the horse.

RECOMMENDED PRACTICES

a. ensure the farrier or other personnel is skilled and uses recognized techniques (exercise due diligence researching the qualifications/experience of farriers, ask for references and continuing education practices)
b. train horses to stand for trimming and shoeing
c. provide the farrier with a clean, safe and well-lit area (26)
d. ensure the first hoof examination for foals takes place within the first month of life and regularly monitor the foal's feet for deviations
e. ensure proper trimming or shoeing (which includes trimming and resetting) is done every 5-8 weeks or as may be needed for individual equines (depending on factors such as age, activity level, nutrition and breed) (3)
f. clean out hooves before riding
g. consult a farrier or veterinarian for advice on how to control thrush.

6.8 Grooming

Grooming is a good opportunity to form and maintain the bond between horse and handler, and can be calming to horses. It is also a good opportunity to inspect horses for injuries. Grooming loosens dirt and mud, which can cause skin irritation and infections. If allowed to accumulate, dirt and mud can reduce the insulating effect of the hair coat in cold environments. Debris (e.g. mud, burdocks) on the horse where the saddle and harness are placed or on the tack itself can cause injury and discomfort.

REQUIREMENTS

Horses must be free of debris where the saddle and harness are placed. The tack must also be free from debris before being placed on the horse.

Burdocks causing discomfort or injury must be removed without delay.

7 Reproductive Management

Horses, donkeys and mules are bred for multiple purposes. Established breeders generally follow a specific breeding program producing quality offspring for a specific market. The term "purpose-bred" describes horses bred for a specific industry, including meat production.

7.1 Responsible Breeding

Many welfare problems can be prevented through responsible breeding. Responsible breeding:

- is purposeful rather than accidental or indiscriminate
- is managed by owners and handlers that are trained and knowledgeable
- involves careful selection of a mare and sire that are proven in their field, have good conformation and temperament, are healthy and free from known hereditary conditions that will impact on the welfare of the offspring
- is based on comprehensive criteria for breeding, including past reproductive performance, age, size of the sire and mare
- produces offspring that has a known market or purpose.

Mares and jennets have special care requirements during pregnancy, foaling and the post-foaling period. A young foal also requires special care. The decision to breed should be carefully considered. Breeding can be very expensive, and is not without risk to the mare/jennet. If there are complications during gestation, costs can increase substantially. The horse market is unpredictable, and there is frequently an oversupply of average horses for sale. If you do not wish to sell the offspring, it is important to be aware that horses can live in excess of 30 years, which may be longer than your ability to care for the animal.

REQUIREMENTS

Do not breed horses unless you are familiar with and able to provide the basics of care as outlined in this Code for both the mares/jennets and foals.

RECOMMENDED PRACTICES

a. seek advice from a veterinarian or experienced breeder prior to breeding a horse
b. plan for what you will do if you are unable to sell the foal or if you are no longer able to care for the foal
c. breed only if the foal has a known market or purpose.

7.2 Evaluating Soundness for Breeding

It is important to ensure that the mare/jennet is assessed by a veterinarian, professional breeder, or technician at a breeding facility prior to breeding to ensure she is physically fit and healthy for the pregnancy.

A breeding soundness examination is recommended in order to detect reproductive abnormalities. The examination is particularly important for mares/jennets that have never been bred before; previously lost a foal; or have failed to conceive in the past.

RECOMMENDED PRACTICES

a. arrange for a breeding soundness examination to be done by a veterinarian proficient in equine reproduction
b. select stallions/jacks with an appropriate body weight and size for the physical development and size of the mare/jennet, when natural breeding is used
c. ensure mares have a body condition score of at least 5 out of 9 before breeding (refer to *Section 4.5-Body Condition Scoring*)
d. ensure jennets have a body condition score of at least 3 out of 5 before breeding (refer to *Section 4.5-Body Condition Scoring*)
e. treat mares/jennets for reproductive abnormalities before they are considered again for breeding in subsequent seasons.

7.3 Care of the Pregnant Mare or Jennet

Attentive management will help ensure the birth of a healthy foal with no injury incurred by the mare/jennet. The average length of gestation for mares is 341 days (+/-15 days); for jennets, it is 365 days (+/-20 days).

Appropriate vaccinations and biosecurity planning helps to protect the mare/jennet and fetus during gestation. They also help to protect the foal after foaling through the immunity transferred from the mare/jennet to the foal via colostrum. Vaccinations should be boosted three to four weeks before the projected foaling date to optimize the antibody concentrations in colostrum.

REQUIREMENTS

Mares/jennets requiring medical care during gestation must receive such care.

Pregnant mares/jennets must have some form of exercise or turnout, unless under stall rest for medical reasons or severe environmental conditions make this temporarily impossible.

RECOMMENDED PRACTICES

a. consult a veterinarian to develop a health management plan tailored to the mare/jennet (e.g. pregnancy examination, pre-foaling instructions, contact information for emergency care during gestation or foaling). Refer to *Section 4-Health Management*
b. ensure the mare/jennet is appropriately vaccinated and dewormed
c. consult a veterinarian or experienced breeder for appropriate levels of exercise during late gestation.

7.4 Foaling

The physical changes indicative of impending parturition (foaling) may include: (27)

- development of an udder
- distended teats
- softening of the tail head
- the presence of a waxy substance on the end of the teats
- elongation of the vulva.

Some mares/jennets will foal without showing any of the above signs; therefore, it is essential that mares/jennets close to foaling are closely observed.

Most mares/jennets will foal unassisted; however, it is critically important to be knowledgeable about the foaling process so that a problem can be promptly identified and addressed. Survival of the foal and/or the mare/jennet is improved by rapid intervention when foaling difficulties arise. Contact a veterinarian or experienced personnel promptly when abnormalities during foaling occur, and be prepared to report relevant timelines (e.g. minutes since water broke). A normal foaling takes less than 20 minutes from the time the water breaks. **If after ten minutes of active labour the foal is not visible, provide appropriate intervention without delay**.

Individual mares/jennets tend to show similar signs of impending parturition and follow similar timelines from one breeding season to another. When reviewed in subsequent breeding seasons, the records also provide valuable information to better predict foaling of individual mares/jennets. *Appendix K* provides a reference to a template foaling record.

REQUIREMENTS

A plan must be in place for the foaling process, including a plan for getting prompt expert advice or help if needed.

Mares and jennets close to foaling must be observed at least twice a day for health, well-being and signs of foaling.

RECOMMENDED PRACTICES

a. consult a veterinarian or experienced breeder to become knowledgeable in the foaling process and how to provide appropriate assistance when the mare/jennet is having difficulty foaling
b. ensure mares/jennets foal on clean pasture or in a large, clean box stall
c. ensure a veterinarian or experienced breeder is available to attend the foaling at the first sign of difficulty
d. arrange for the veterinarian to examine the post-partum mare/jennet, primarily if they did not follow the normal foaling progressions. The placenta should pass within three hours and be saved so it can also be examined.

7.5 Care of the Newborn Foal

A healthy foal will be active, alert and responsive, and will keep the mare's udder empty. The most common signs of abnormalities in foals include:

- lethargy
- inability to rise within one hour after birth
- not nursing within two hours of birth
- not passing its first feces (the meconium) within three hours of birth
- straining to defecate or urinate
- excessive salivation or milk appearing in the nostrils
- grinding its gums
- signs of colic (e.g. rolling on its back)
- milk staining on the face (due to a sick foal standing at a full udder and not sucking).

REQUIREMENTS

Newborn foals must be monitored to ensure they can rise and suck unassisted.

Appropriate care must be provided without delay if abnormalities in the foal are observed.

RECOMMENDED PRACTICES

a. treat the navel stump during the first 24 hours using an appropriate product, such as 0.5% chlorhexidine (dip the navel for 30 seconds each time) (28). The use of caustic substances (e.g. 7% iodine) is harmful.
b. clean and dry the udder and inner thighs of the mare/jennet before the foal sucks (28) (note: this may not be possible when foaling takes place on pasture or range)
c. have a veterinarian evaluate the foal and include a test for adequate colostrum intake. A veterinary evaluation is strongly advised in cases where the foal does not suck adequately in the first six hours of life (see *Section 7.5.1* for more details).

7.5.1 Colostrum

Colostrum is the first milk produced by the mare/jennet at parturition. It contains high concentrations of antibodies, which protect the newborn foal from infection until its own immune system is fully functional. Failure to receive adequate colostrum is one of the main risk factors for severe infection in foals.

The newborn foal's ability to absorb colostrum antibodies is highest immediately after birth and decreases by 6-8 hours after birth. A veterinarian can perform a blood test to assess whether a foal has received sufficient colostrum.

Mares produce colostrum only once in each pregnancy, approximately within the last 2-3 weeks prior to foaling. If mares stream colostrum prior to foaling, the colostrum can be collected by milking and frozen for later administration to the foal. If colostrum is not available from the mare, plans should be made to provide an alternative antibody source. When supplementation is necessary, provide the foal with frequent feedings of colostrum as soon as possible after birth.

REQUIREMENTS

Foals must receive colostrum or alternative care to maintain their health and vigour.

RECOMMENDED PRACTICES

a. discuss colostrum management with a veterinarian or experienced breeder before the foal is born
b. keep a frozen store of (or have access to) high quality colostrum
c. thaw stored colostrum in warm water (not a microwave)
d. use good hygiene practices when collecting, storing and feeding colostrum.

7.5.2 Weaning

Weaning is necessary in order to facilitate more handling and training of the foal and to allow the mare/jennet to regain lost body condition. Under managed conditions, the foal is typically weaned at 4-6 months of age and may experience one or more of the following stressors: separation from the mare/jennet, a change in diet, exposure to new surroundings, and the expectation for more handling than what the foal has previously experienced (29).

There are several weaning methods. Each method has advantages and disadvantages, and the method chosen will depend on past experiences and the facilities available on the farm.

REQUIREMENTS

Facilities or fencing used during weaning must be safe and made of strong materials free from protrusions.

Corrective action must be taken if the foal or mare/jennet injures themselves attempting to reunite during weaning.

RECOMMENDED PRACTICES

a. consult a knowledgeable and experienced horseperson for advice on weaning methods
b. base weaning decisions on the mare's/jennet's milk production and body condition as well as the foal's age, physical development, and health status
c. wean foals in a manner that minimizes stress to the foal and mare/jennet
d. keep weaned foals in the company of other equines, such as other weaned foals or older, calm horses (isolation is stressful to foals)
e. plan weaning so it does not coincide with other stressful events or times when the foal's immune system may be compromised (e.g. adverse environmental conditions and painful practices)
f. if creep feeding is to be provided, introduce foals to creep feed at least one month before weaning
g. ensure foals have access to a high quality, high fibre diet (e.g. grass, hay or haylage) before, during and after weaning.

8 Transportation

Section 8-Transportation applies to both commercial haulers and individual transporters. Where necessary, specific provisions for either loose or halter loaded horses have been included. The scope of the equine Code of Practice ends at the farm gate, but includes Requirements and Recommended Practices that affect the transportation process. Refer to the Code of Practice-Transportation for the actual transportation process (31).

The federal requirements for animal transport are covered under the *Health of Animals Regulations, Part XII* (31). They are enforced by the Canadian Food Inspection Agency (CFIA) with the assistance of other federal, provincial and territorial authorities. Some provinces have additional regulations related to animal transport. Per the *Health of Animals Regulations*, each person responsible for transporting animals, or arranging for their transport, must ensure that no part of the transportation process causes injury or undue suffering to the animals (31). As these regulations may change over time, ensure that you have the most current information.

If you are responsible for loading, transporting or unloading animals, you must be familiar with, and follow, Canada's animal transport requirements. Your vehicle is subject to inspection at any time. If you do not comply with the regulations, you could be fined or prosecuted. If your actions or neglect are considered animal abuse, you could also be charged and convicted under the *Criminal Code of Canada* and/or provincial legislation (32).

8.1 Pre-Transport Decision Making

Per the *Health of Animals Regulations*, it is the responsibility of the party that is transporting or loading animals (or causing animals to be transported or loaded) to ensure that all animals are fit for the intended journey. Those responsible for arranging transport need to consider how long the horses will be in transit until their final destination and any additional services that may be required (e.g. feed, water, rest). If in doubt, assume the longest trip. Refer also to *Appendix H-Transport Decision Tree.*

8.1.1 Fitness for Transport

Horse owners and persons transporting horses have a primary responsibility for determining if an animal is fit for the expected duration of the trip. While the driver should not be relied upon to determine whether the horse is fit for transport, they have the right and responsibility to refuse to load a horse that they recognize as unfit.

Do not load horses with a reduced capacity to withstand transportation. This may be due to injury, fatigue, infirmity, poor health, distress, impending parturition or any other cause (33). Never transport a horse unless you are sure it is healthy enough to withstand the stress of the entire expected trip (including intermediate stops). Each case must be judged individually, and the welfare of the horse must be the first consideration. **If you are not sure whether a horse is fit for the trip, do not transport - contact a veterinarian**.

When animals are unfit for transport, you must provide treatment until the animal is fit for the trip or not transport the animal, and, if necessary, euthanize the animal. Per the *Health of Animals Regulations*, it is illegal to load or unload a non-ambulatory animal unless the animal is being transported with special provisions for veterinary treatment or diagnosis.

REQUIREMENTS

Horses must be individually assessed for fitness for transport before being transported. Evaluate fitness for transport in the context of each trip and all relevant factors (e.g. anticipated total trip duration from farm to final destination and prevailing weather conditions).

Unfit horses must not be transported, except for veterinary diagnosis or treatment.

***Refer to* Appendix H-Transport Decision Tree.**

RECOMMENDED PRACTICES

a. consult a veterinarian if uncertain about the horse's fitness for transport.

8.1.2 Preparing Horses for Transport

Preparation for transport starts long before the trip actually begins. Management factors such as lameness prevention, training to load, nutrition and other factors have a collective impact on fitness for transport, and should be considered as a whole.

REQUIREMENTS

If the expected duration of the horse's confinement is longer than 24 hours from the time of loading, the horse must be fed and watered within five hours before being loaded (31).

RECOMMENDED PRACTICES

a. check the vaccination and health status requirements for your destination well in advance of the transport date, particularly for transport to another country or province
b. avoid changes in diet immediately before or during a trip (34)
c. pack extra feed and water in case there are unanticipated delays during transport
d. develop a contingency plan before each trip, including:
    - contact details for veterinarians and local authorities along the route
    - information on rest stops where horses may be unloaded, rested, fed and watered
    - maps or other navigation systems for alternate route planning
e. keep a first-aid kit in the transport vehicle.

If using protective equipment (e.g. wraps and shipping boots):

a. seek advice from a knowledgeable and experienced horseperson
b. ensure protective equipment fits the horse correctly and comfortably
c. acclimate the horse to wearing protective equipment before training to load or transport.

8.1.3 Arranging Transport

Horse owners and managers have a responsibility to ensure that the transporter is trained and qualified.

RECOMMENDED PRACTICES

a. ensure only trained personnel load, unload and transport horses
b. ensure all required paperwork is completed and provided to the transporter. The required paperwork varies - refer to the provincial authority and the *Health of Animals Regulations*
c. ensure loading facilities are compatible with the type of trailer being used
d. ensure the following information is discussed and agreed upon between the driver and consigner:
   - number of horses to be transported
   - class of horses to be transported (e.g. yearlings, mature stallions)
   - time and point of loading
   - destination
   - any special considerations for the horses being transported
   - protection from extremes of temperature (cold or hot), especially for foals and geriatrics.

8.2 Loading and Unloading

Research on farm animal transport shows that loading and unloading are stressful components of transport (35). A combination of stressors can occur in a short period of time, including exposure to unfamiliar surroundings and animals (35). Injuries may occur when animals slip or fall.

REQUIREMENTS

The requirements for loading and unloading procedures and equipment as described in the* Health of Animals Regulations *must be complied with.[1]

Mares and jennets must not be transported if they are likely to give birth during the trip.

Every mare with its suckling offspring must be segregated from all other animals during transport.

Every mature stallion must be segregated from all other animals during transport.

Horses must be individually assessed before loading and upon arrival back to the farm.

***Refer to* Appendix H-Transport Decision Tree.**

RECOMMENDED PRACTICES

a. ensure handlers are trained in proper loading and unloading practices
b. ensure roads and loading areas are accessible in all kinds of weather
c. ensure loading facilities have gentle ramps and are uniformly lit (avoid sharp contrasts and shadows)
d. load horses calmly and quietly
e. clean and sanitize vehicles between uses, especially if transporting horses of different origin
f. for vehicles requiring horses to step up: use a rubber bumper to prevent injuries as the horse steps up
g. for loose loading: determine the proper loading density (refer to the *Recommended Code of Practice for the Care and Handling of Farm Animals: Transportation*) and ship pre-socialized horses together.

1 The Health of Animals Regulations prohibit loading and unloading an animal in a way likely to cause injury or undue suffering. The Regulations also require that ramps, chutes and other equipment used for loading and unloading animals:
- be maintained and used so as not to cause injury or undue suffering to animals
- have sides of sufficient strength and height to prevent animals from falling off the ramp or other equipment
- provide animals with secure footing on ramps, inside the trailer and in the loading area
- have no unprotected gap between the ramp and the vehicle.

8.2.1 Training to Load

Section 8.2.1 is applicable to halter loaded horses. Horses well trained to the halter should be taught loading procedures well before the anticipated date of transport. Horses that have had a positive experience loading are often less fearful than horses loaded for the first time. Training to load also facilitates loading during an emergency.

Techniques for training to load include: (34)

- teach the horse to lead, stop, turn in both directions, and back up in-hand before asking the horse to load in a vehicle
- ensure the vehicle entrance is wide and well lit
- load and unload the horse several times to reinforce training
- use caution when closing the trailer as some horses may panic
- consider using positive reinforcement (e.g. giving the horse a food reward when the horse loads successfully)
- use a trailer that is large and open (during initial training)
- load an experienced horse first (the horse in training may be more apt to load following a familiar companion).

Refer to *Section 6.3-Principles in Training and Learning Theory* for other details relevant to training.

RECOMMENDED PRACTICES

a. seek assistance on training to load from a knowledgeable and experienced horseperson.

8.2.2 On-Farm Management Post-Transport

Research suggests that transport itself or the simultaneous management changes associated with transport (e.g. new surroundings, physical constraint and deprivation of water and feed) can predispose horses to colic and respiratory disease (36,37).

REQUIREMENTS

Horses must be provided with water upon arrival to the farm.

RECOMMENDED PRACTICES

a. avoid changes in feed shortly after transport
b. monitor recently transported horses carefully for dehydration, wounds, signs of colic, fever or respiratory disease, particularly after long distance transport or when horses of different origin were mixed (38,39)
c. segregate new arrivals from resident horses for at least seven days and monitor their health status.

9 Change or End of Career

Horses, donkeys and mules can have multiple careers in their working lives. Responsible ownership includes making decisions for equines that are no longer able to carry out the work desired of them as a result of age, injury or illness.

9.1 Change or End of Career Options

Options include:

- retire completely
- transition to a lower performance level or easier job on the farm
- use as a companion to another horse, donkey or mule
- sell to a new owner or consign to a quality or specialized horse sale
- donate to a reputable facility, such as a university
- arrange for euthanasia
- arrange for humane slaughter.

Select an option based on the horse's physical condition, soundness, temperament, demeanor, socialization (with both humans and horses), and tractability. Euthanasia or humane slaughter are legitimate considerations and may be the desired or required course of action depending on the condition of the horse and availability of other options. Before choosing humane slaughter as an option, the rigours of transport to a slaughter facility must be considered. Appropriate withdrawal periods for medications must also be observed. Refer also to *Section 8-Transportation* and *Section 10-Euthanasia*. For information on drug withdrawal periods, consult a veterinarian or the Meat Hygiene Manual of Procedures (*Appendix K* provides a reference to this manual).

Sale by private treaty enables the seller to learn more about the buyer, their facilities and intended use for the horse. Sellers may wish to restrict the activity the horse is transitioned into, particularly when the horse is deemed unfit for certain work or athletic expectation. Refer to *Appendix K-Resources for Further Information*.

REQUIREMENTS

The welfare of the horse must be of paramount importance when making change or end of career decisions.

RECOMMENDED PRACTICES

a. get a specific diagnosis of the horse's condition - this is the best way to identify acceptable uses for the horse and future care needs
b. ensure the horse is transitioned to a responsible caregiver (e.g. perform a site visit, request references).

10 Euthanasia

Owners and managers are responsible for euthanasia decisions, and these decisions should never be made without careful consideration. Horses, donkeys and mules serve their owners in many ways and deserve an end of life that is humane. Euthanasia can be performed on farm or at an appropriate off-farm facility.

When caring for a sick or injured horse, consult a veterinarian to determine when to stop treatment and instead euthanize, taking the following into account:

- what is the likelihood of recovery or return to an acceptable quality of life?
- how long should the animal be given to recover?
- has the horse become depressed or lethargic?
- what kind of special care will the animal require and are you able to meet those needs in terms of your skill level, time, and available facilities?
- do you have the financial resources to continue to provide for the animal?
- have the chances of recovery improved or declined over the course of treatment?

RECOMMENDED PRACTICES

a. work with a veterinarian to develop a plan for euthanasia. The written plan should be kept in a known location and include:
   - the name, and, if applicable, contact information of the person(s) responsible for making euthanasia decisions on farm and the person responsible for performing the procedure
   - a schedule for proper maintenance of any equipment
   - the protocols for disposal, in accordance with provincial and/or municipal regulations

b. discuss euthanasia with a veterinarian when the horse:
   - is enduring continuous or unmanageable pain from a condition that is chronic and incurable
   - has a medical condition that has a grave prognosis without surgery, and surgery is unavailable or unaffordable
   - possesses dangerous behavioural traits that renders it a hazard to itself, other horses or handlers
   - is suffering from a severe, traumatic injury (e.g. broken leg or wound significantly impacting a major organ, muscle or skeletal system)
   - has a disease or condition and the cost of treatment is prohibitive
   - has a transmittable disease, which is a serious health hazard to other horses or humans

   Or when you
   - are unable to care for the horse and cannot find it a suitable new home.

10.1 Timelines for Euthanasia

A key component of euthanasia is timeliness. It is not acceptable to delay euthanasia for reasons of convenience or cost (40). When euthanasia is deemed necessary, it must be performed without delay, particularly in the case of a severe, traumatic injury. Leaving a suffering animal to die of natural causes (what is known as "letting nature take its course") is not acceptable (40).

REQUIREMENTS

Equines that are sick, injured, or in pain must receive appropriate treatment without delay or be euthanized without delay.

For sick, injured or compromised horses that are not showing improvement, horse owners or caregivers must, without delay, obtain veterinary advice on appropriate care and treatment or make arrangements for euthanasia.

10.2 Methods

The euthanasia method used must be quick, cause minimal pain and distress, and render the horse immediately unconscious. The following are the only acceptable methods for euthanasia of equines: (41)

- lethal injection administered by a veterinarian
- free bullet deployed by a skilled individual
- penetrating captive bolt deployed by a skilled individual (depending on the model used, a secondary step will be required) (42). *Appendix I* **and** *J* **provide important further guidelines**.

REQUIREMENTS

An acceptable method of euthanasia must be used.

Euthanasia must be performed by persons knowledgeable in the method used for equines.

Disposal must be in accordance with provincial and municipal regulations.

RECOMMENDED PRACTICES

a. when choosing a method of euthanasia consider
   - the medical condition of the horse being euthanized
   - ability to restrain the animal
   - human safety and the safety of other animals
   - disposal options
   - potential need for sample collection for diagnostic testing
   - the emotional comfort with the procedure for the owner, the person performing euthanasia and any bystanders

b. consider disposal options well in advance as they may impact on the method and location for euthanasia. Refer to the relevant provincial and/or municipal regulations.

10.3 Confirmation of Death

In order to achieve a humane death, the horse must be rendered immediately unconscious and must go on to die without regaining consciousness. Death does not occur immediately-it may take several minutes.

Reflex motor activity or muscle spasms may follow the loss of consciousness and should not be mistaken as an indication of pain or distress. Following the use of the captive bolt or gunshot, the initial involuntary movements should not begin immediately, but approximately 5-20 seconds later. If lethal injection is used, there may be variable amounts of movement associated with deepening anesthesia.

There are several reasons why a secondary step may be needed. In some cases, the euthanasia tool may only be capable of temporarily stunning the animal; therefore, a secondary step is required to euthanize the animal (40). A secondary step is always required if the first step fails. *Appendix J-Technical Guidelines for Euthanasia Methods* **provides important information on acceptable secondary steps**.

An animal has not been rendered unconscious if the animal (40):

- vocalizes
- attempts to rise
- lifts its head
- blinks like an alive animal
- responds to a painful stimulus.

Use multiple indicators to confirm death:

- absence of all movement for at least five minutes
- absence of a heartbeat and pulse for at least five minutes
- lack of breathing for at least five minutes
- fixed, dilated pupil
- absence of all reflexes including the corneal reflex (i.e. no blinking when the eyeball is touched).

REQUIREMENTS

Confirm unconsciousness immediately when it is safe to do so.

Have a secondary euthanasia step or method available.

Confirm death before moving or leaving the animal.

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Template Budget for Horse Ownership

This template is intended to assist prospective horse owners in developing a budget so they can plan for the short- and long- term costs of horse ownership. Actual costs depend on several factors; therefore, it is important to consult with experts in your area to establish your actual costs. Depending on the individual context, some costs listed below may not apply; other costs may need to be added.[1]

	Initial Costs	
Pre-Purchase Exam		
Purchase of the horse		
Costs associated with transport (e.g. trailer)		
Tack - Saddle and pad - Bridle - Halter		
Grooming supplies		

Minimum Ongoing Costs			
	Approximate Cost/ Unit	**Actual Cost/Unit**	**Annual Total**
Boarding (or) On-Farm Care[2]	$250 - $1,000/month $1,000 - $2,000/year		
Routine Veterinary Care	$300 - $500/year		
Emergency Veterinary Care (consider also euthanasia and disposal)	Minimum $1,000		
De-worming/Fecal Examinations	$100/year		
Farrier Expenses	$25 - $50 trimming/ 6-8 weeks (or) $60 - $250 shoeing/ 4-8 weeks		
Insurance (optional)	3% of horse's value + $250/year for medical/ surgical		
Liability insurance (optional)	Varies		

1 The costs listed are not intended as suggestions for prices but rather a reflection of average expected costs based on 2013 dollars
2. Assumes basic facilities are in place on farm and in good condition (e.g. shelter and water is set up).

Sample Water Intakes

The table below provides guidelines on expected water intakes for horses:[1]

Class	Ambient Temperature	Average Total Water Intake (L/day)	Estimated Range of Water Intakes (L/day)
Idle, mature (500kg, 1100lbs)	20°C	25	21-29
Idle, mature (500kg, 1100lbs)	30°C	48	42-54
Idle, mature (500kg, 1100lbs)	-20°C	42	37-47
Pregnant (500kg, 1100lbs)	20°C	31	27-35
Lactating (500kg, 1100lbs)	20°C	51	40-63
Moderate exercise (500kg, 1100lbs)	20°C	41	36-46
Moderate exercise	35°C	82	72-92
Yearling (300kg, 660lbs)	20°C	19	17-21
Yearling (300kg, 660lbs)	-10°C	18	16-20

1 National Research Council (2007) Page 131 in Nutrient Requirements of Horses. 6th rev. ed. National Academies Press, Washington, DC.

Vital Signs in Horses and Donkeys

Normal ranges for vital signs in horses and donkeys when at rest and relaxed:

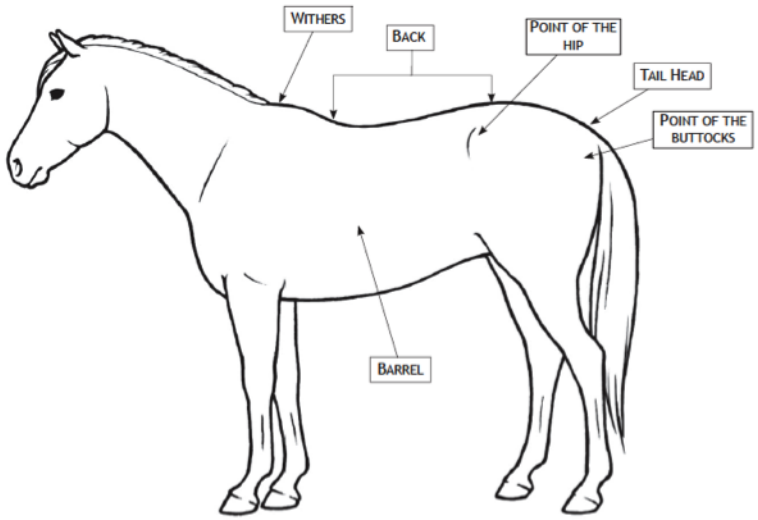
Adult horses	
Heart rate	28-44 beats per minute
Respiration rate	10-14 breaths per minute
Rectal temperature	37°C-38.5°C (99.5°F-101.3°F)
Foals	
Heart rate	60-110 beats per minute
Respiration rate	25-60 breaths per minute
Rectal temperature (resting)	Increases for first 4 days and plateaus at 37.2°C-38.6°C (99°F-101.5°F)
Adult donkeys	
Heart rate	36-68 beats per minute
Respiratory rate	12-44 breaths per minute
Rectal temperature	36.2°C-37.8°C (97.2°F-100°F)
Young donkeys (up to 2 years)	
Heart rate	36-68 beats per minute
Respiration rate	12-20 breaths per minute
Rectal temperature	36.5°C-38.9°C (97.8°F-102.1°F)

General

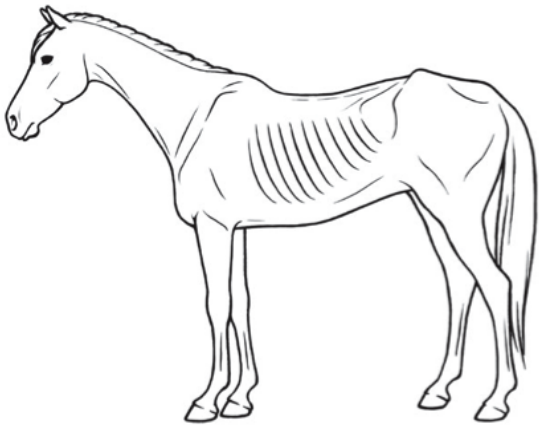
The gums should be pink and moist, and should return to that color within 2 seconds of pressing with your finger on the gum line above the teeth and then releasing (this is known as the capillary refill time).

Body Condition Scoring - Horses and Ponies

LABELLED ILLUSTRATION OF A HORSE[1]



BCS 1



WHOLE BODY

- Poor condition
- Extremely emaciated
- No fat tissue felt

NECK

- Bone structure visible

WITHERS

- Bone structure easily visible

BACK

- Spinous processes project prominently

TAIL HEAD

- Tail head, point of the buttocks and point of the hip project prominently

RIBS

- Project prominently

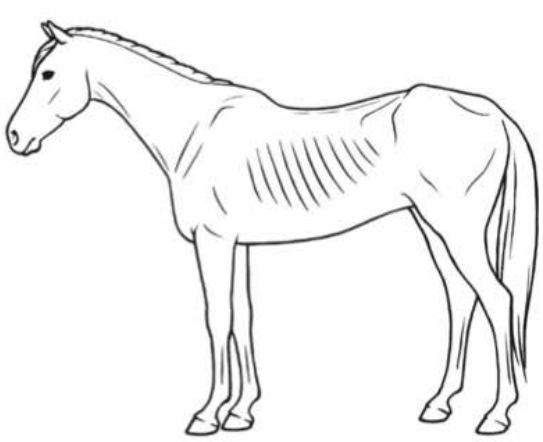
SHOULDER

- Bone structure easily noticeable

1 Adapted from: What's the Score? Body Condition Scoring for Livestock CD-ROM CD 400/40-1 with permission of Alberta Agriculture and Rural Development. www.agriculture.alberta.ca Copies of the CD can be ordered on-line at: www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex9622

Body Condition Scoring - Horses and Ponies (continued)

BCS 2



WHOLE BODY

- Very thin
- Emaciated

NECK

- Bone faintly discernible

WITHERS

- Bone structure faintly noticeable

BACK

- Spinous processes prominent
- Slight fat covering over base of spinous processes
- Transverse processes of lumbar vertebrae feel rounded

TAIL HEAD

- Prominent

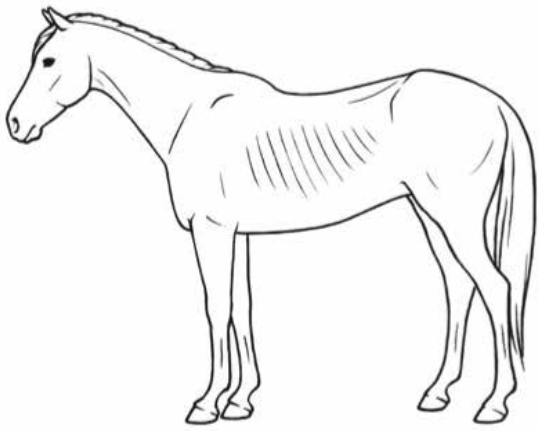
RIBS

- Prominent

SHOULDER

- Faintly discernible

BCS 3



WHOLE BODY

- Thin

NECK

- Accentuated

WITHERS

- Accentuated

BACK

- Fat build up halfway on spinous processes, but easily discernible
- Can't feel transverse processes

TAIL HEAD

- Prominent but individual vertebrae can't be visually identified
- Point of the hip rounded, but easily discernible
- Point of the buttocks not distinguishable

RIBS

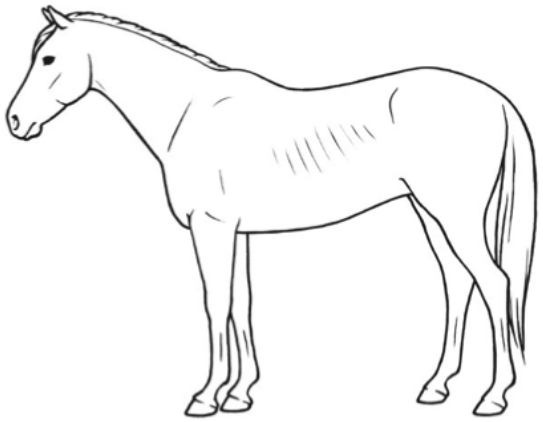
- Slight fat cover
- Individual ribs discernible

SHOULDER

- Accentuated

Body Condition Scoring - Horses and Ponies (continued)

BCS 4



WHOLE BODY
- Moderately thin

NECK
- Not obviously thin

WITHERS
- Not obviously thin

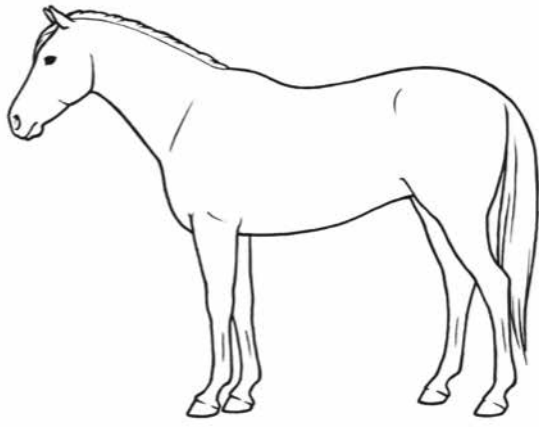
BACK
- Negative crease along back

TAIL HEAD
- Prominence depends on conformation
- Fat palpable
- Point of the hip not discernible

RIBS
- Faint outline discernible

SHOULDER
- Not obviously thin

BCS 5



WHOLE BODY
- Moderate condition

NECK
- Blends smoothly into body

WITHERS
- Rounded over spinous processes

BACK
- Back is level

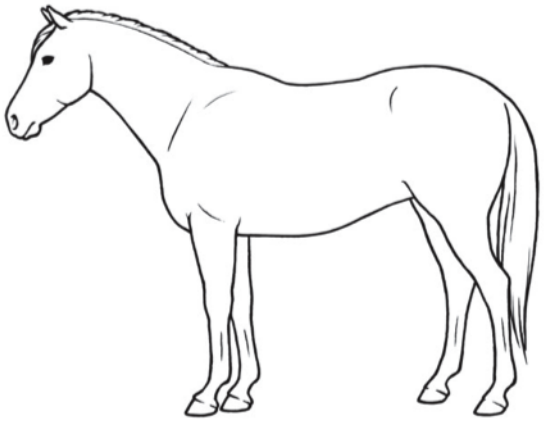
TAIL HEAD
- Fat around tail head beginning to feel spongy

RIBS
- Individual ribs can be felt, but not visually distinguished

SHOULDER
- Blends smoothly into body

Body Condition Scoring - Horses and Ponies (continued)

BCS 6



WHOLE BODY
- Moderately fleshy

NECK
- Fat beginning to be deposited

WITHERS
- Fat beginning to be deposited

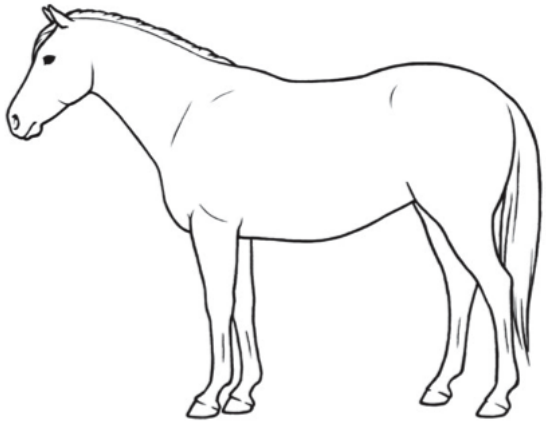
BACK
- May have slight positive crease down back

TAIL HEAD
- Fat around tail head feels soft

RIBS
- Fat over ribs feels spongy

SHOULDER
- Fat beginning to be deposited
- Point-of-shoulder not discernible

BCS 7



WHOLE BODY
- Fleshy

NECK
- Fat deposited along neck

WITHERS
- Fat deposited along withers

BACK
- May have positive crease down back, behind shoulder

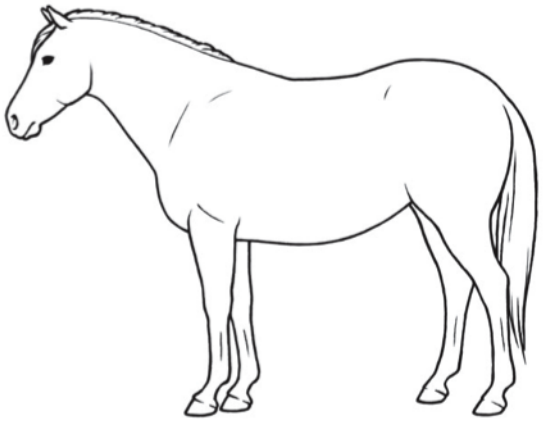
TAIL HEAD
- Fat around tail head is soft

RIBS
- Individual ribs can be felt
- Noticeable fat fillings between ribs

SHOULDER
- Fat deposited behind shoulder

Body Condition Scoring - Horses and Ponies (continued)

BCS 8



WHOLE BODY
- Fat
- Fat deposited along inner buttocks

NECK
- Noticeable thickening of neck

WITHERS
- Area along withers filled with fat

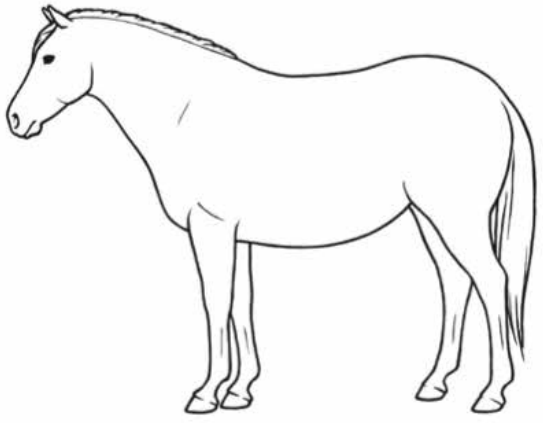
BACK
- Positive crease down back

TAIL HEAD
- Tail head fat very soft

RIBS
- Difficult to feel individual ribs

SHOULDER
- Area behind shoulder filled in, flush with body

BCS 9



WHOLE BODY
- Extremely fat
- Fat along inner buttocks may rub together
- Flank filled in flush

NECK
- Bulging fat

WITHERS
- Bulging fat

BACK
- Obvious positive crease down back

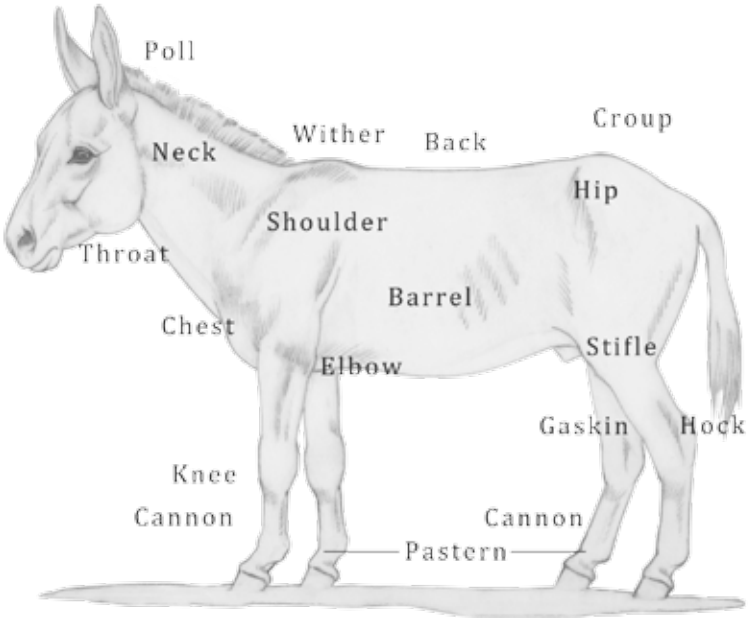
TAIL HEAD
- Building fat around tail head

RIBS
- Patchy fat appearing over ribs

SHOULDER
- Bulging fat

Body Condition Scoring - Donkeys and Mules

LABELLED ILLUSTRATION OF A DONKEY[1]



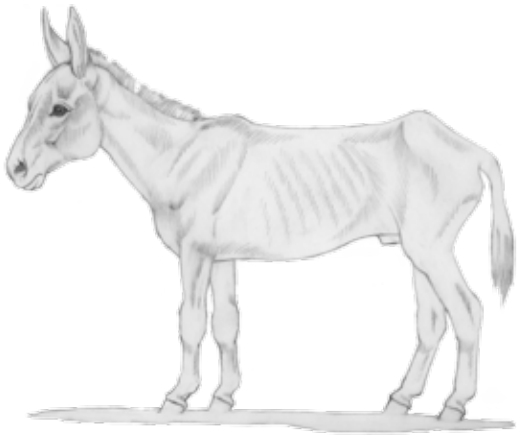
BCS 1

NECK AND SHOULDERS

- Neck thin, all bones easily felt
- Neck meets shoulder abruptly, shoulder bones easily felt, angular

WITHERS

- Dorsal spine of withers prominent and easily felt



RIBS AND BELLY

- Ribs can be seen from a distance and felt with ease
- Belly tucked up

BACK AND LOINS

- Backbone prominent, can feel dorsal and transverse processes easily

HINDQUARTERS

- Hip bones visible and felt easily (hock and pin bones)
- Little muscle cover
- May be cavity under tail

1 Images in Appendix E developed by Michelle Grant (Calgary, Alberta). www.michellegrant.ca Text for body condition scoring of donkeys developed by and used with the permission of The Donkey Sanctuary. Copyright: The Donkey Sanctuary. www.thedonkeysanctuary.org.uk

Body Condition Scoring - Donkeys and Mules (continued)

BCS 2

NECK AND SHOULDERS

- Some muscle development overlying bones
- Slight step where neck meets shoulders

WITHERS

- Some cover over dorsal withers
- Spinous processes felt but not prominent

RIBS AND BELLY

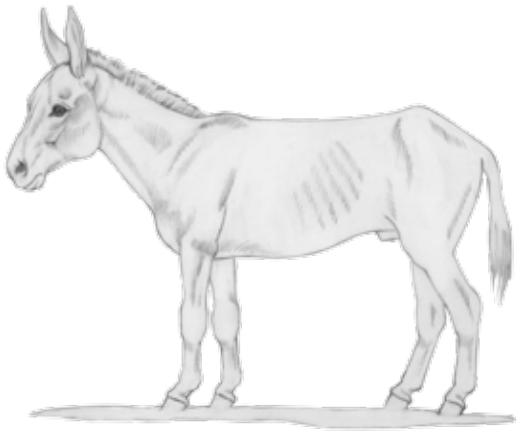
- Ribs not visible but can be felt with ease

BACK AND LOINS

- Dorsal and transverse processes felt with light pressure
- Poor muscle development either side midline

HINDQUARTERS

- Poor muscle cover on hindquarters, hip bones felt with ease



BCS 3

NECK AND SHOULDERS

- Good muscle development, bones felt under light cover of muscle/fat
- Neck flows smoothly into shoulder, which is rounded

WITHERS

- Good cover of muscle/fat over dorsal spinous processes, withers flow smooth into back

RIBS AND BELLY

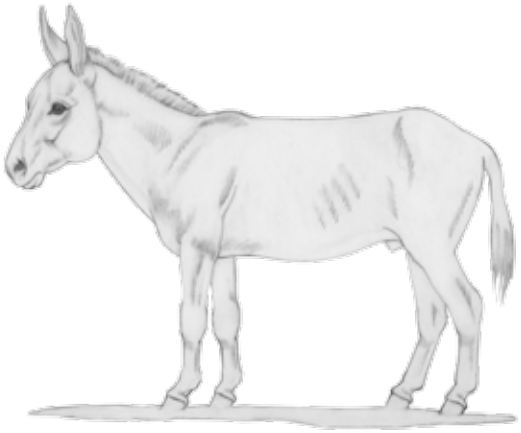
- Ribs just covered by light layer of fat/muscle, ribs can be felt with light pressure
- Belly firm with good muscle tone and flattish outline

BACK AND LOINS

- Cannot feel individual spinous or transverse processes
- Muscle development either side of midline is good

HINDQUARTERS

- Good muscle cover in hindquarters, hip bones rounded in appearance, can be felt with light pressure



Body Condition Scoring - Donkeys and Mules (continued)

BCS 4

NECK AND SHOULDERS

- Neck thick, crest hard, shoulder covered in even fat layer

WITHERS

- Withers broad, bones felt with firm pressure

RIBS AND BELLY

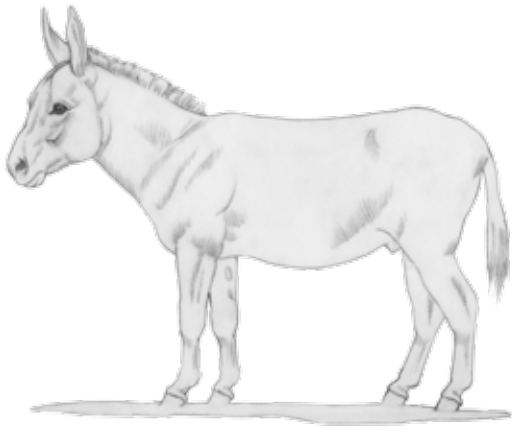
- Ribs dorsally only felt with firm pressure, ventral ribs may be felt more easily
- Overdeveloped belly

BACK AND LOINS

- Can only feel dorsal and transverse processes with firm pressure
- Slight crease along midline

HINDQUARTERS

- Hindquarters rounded, bones felt only with firm pressure
- Fat deposits evenly placed



BCS 5

NECK AND SHOULDERS

- Neck thick, crest bulging with fat and may fall to one slide
- Shoulder rounded and bulging with fat

WITHERS

- Withers broad, unable to feel bones

RIBS AND BELLY

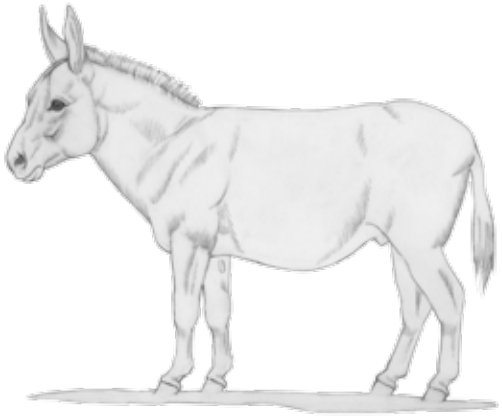
- Large, often uneven fat deposits covering dorsal and possible ventral aspect of ribs
- Ribs not palpable
- Belly pendulous in depth and width

BACK AND LOINS

- Back broad, unable to feel spinous or transverse processes
- Deep crease along midline, bulging fat either side

HINDQUARTERS

- Cannot feel hip bones, fat may overhang either side of tail head, fat often uneven and bulging.



Key Points for Owners of Donkeys or Mules

Donkeys and mules require the same good animal care for their health and well-being as do horses. Several key points are listed below, including how these equines differ from horses.

Facilities and Housing

Donkeys and mules need shelter from rain, snow and windy conditions. The thick, dense hair coat of donkeys makes them particularly vulnerable to cold, damp weather. Donkeys do not have the extra protective undercoat that horses have to repel moisture. Most mules, however, have a coat like a horse, including the protective undercoat. In winter, donkeys should be provided with an enclosed shelter and ample bedding.

Donkeys are social animals and benefit from the company of other equines. Some donkeys and mules may become depressed or apathetic when isolated from a former companion. This can have health implications, particularly if they go off feed.

Feed and Water

To maintain donkeys in good condition, they should be fed grass types of hay. Lush pastures and high quality legume hay is not recommended for these equines. Donkeys can be prone to obesity and certain conditions, such as laminitis and hyperlipemia, which can be fatal if not properly treated.

Concentrates are seldom needed except for young donkeys, nursing jennets and older donkeys. Salt and minerals are necessary for donkeys and mules to maintain good health and vigour.

It is essential that clean water is provided. Donkeys and mules are likely to limit their water intake to the point of dehydration unless clean drinking water is provided.

Health and Reproduction

Donkeys tend to be stoic. They often do not show behavioural signs indicative of illness until the condition is advanced. In donkeys and mules, a reduced or loss of appetite is a significant concern.

Like horses, donkeys and mules need routine care. Ensure proper trimming is done every 8-12 weeks or as may be needed for individuals. The time between hoof trims will depend on factors such as ground conditions, activity level, nutrition and age. Consult a veterinarian for advice on vaccinations and deworming.

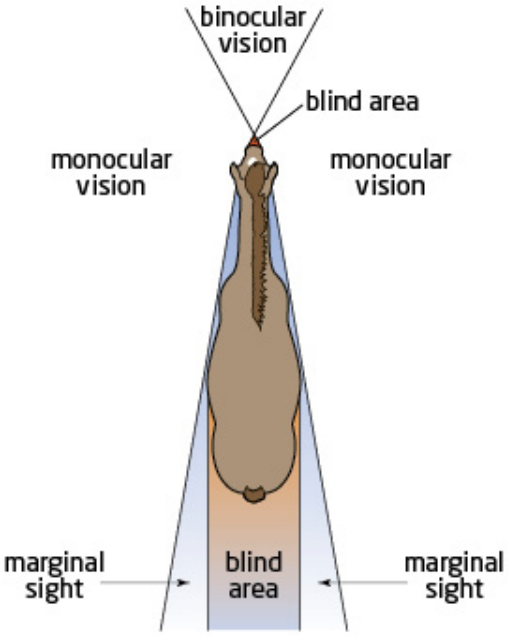
The gestation period for jennets is 365 days (+/– 20 days).

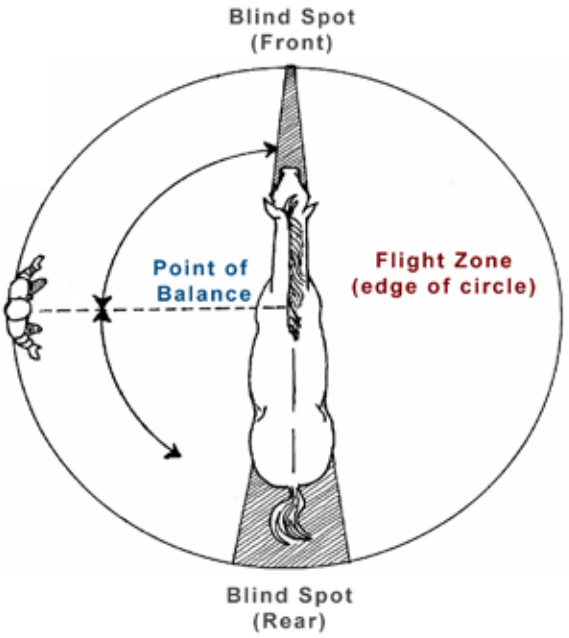
Jacks should only be handled by experienced horsepeople and can be very aggressive during breeding. Jacks should also have good basic ground skills and understand commands prior to being used for hand breeding. For pasture breeding, it is important to be aware of the breeding behaviour of jacks and mares/jennets. For instance, jacks typically bite the jennet/mare - while it may be possible to minimize this with training the behaviour is part of the animal's breeding behaviour.

Handling

Historically, donkeys lived in rugged regions. When they were threatened, they simply stood still and tried to blend into the landscape rather than bolt. To this day, when a donkey or mule feels threatened, they are likely to stop and assess the situation. This is often incorrectly interpreted as stubbornness. By contrast, the horse relies on "flight" and its instinct is to run away from perceived threats. Donkeys and mules are extremely intelligent. They respond well to positive training methods.

Understanding Flight Zone, Point of Balance and Field of Vision





Flight Zone:[1] This is the space surrounding a horse that, when penetrated, causes the horse to move to reestablish a comfortable distance. Low-stress handling is based on applying and releasing pressure on the edge of the flight zone ideally never penetrating the zone so aggressively that the horse becomes frightened and "takes flight". You have entered a horse's flight zone the moment your approach causes the horse to move away. As a horse becomes more fearful, its flight zone will increase.

Point of Balance:[1] The point of balance is located in the shoulder area of the horse. The handler should stand behind the point of balance at the shoulder to make the horse go forward and stand in front of the point of balance at the shoulder to make an animal back up.

Field of Vision:[2] When looking to the side, horses have monocular vision (each eye can operate independently). When looking forward, they have binocular vision (eyes operate in tandem). Horses take longer than humans to adjust to changes in light intensity and they have poor depth perception so may baulk at shadows or puddles.

1 Grandin, T (2010) How to improve livestock handling and reduce stress. Pages 64-87 in Improving Animal Welfare: A Practical Approach. T. Grandin, ed. CAB International, Oxfordshire, UK.
2 Woods, J. (2010) Recommended handling guidelines and animal welfare assessment tool for horses. Horse Welfare Alliance of Canada.

Left image source: Developed by the Alberta Equine Welfare Group for the booklet "Humane Handling Guidelines for Horses – Standards for the Care of Unfit Animals" available for download under Resources at www.horsewelfare.ca
Right image source: J Woods (2010) Recommended handling guidelines and animal welfare assessment tool for horses. Horse Welfare Alliance of Canada.

Transport Decision Tree

IS THE HORSE FIT FOR THE TRIP?

YES → **LOAD HEALTHY ANIMALS**

NO

IS THE HORSE UNFIT OR COMPROMISED?

UNFIT
Do Not Load - Do Not Transport

Except for veterinary treatment on the advice of a veterinarian

- Fracture or any other severe injury[1]
- Sick or diseased horses (e.g. strangles, herpes virus, pneumonia)
- Lame (Classes 3,4,5; See reverse)
- Fever due to illness
- Acute frostbite
- Colic
- Exhaustion
- Dehydration
- Recent major surgery
- In shock or dying
- Emaciation
- Weakness
- Non-ambulatory (i.e., downer, unable to rise on its own)
- Likely to give birth or has given birth within 48 hours
- Suspected or confirmed nervous disorder (e.g., Rabies)
- Uterine, vaginal or rectal prolapse
- Laboured breathing

[1] *Severe injury includes deep or gaping wounds, profuse bleeding, penis injuries, severe head injuries, scrotal hernias, and severe laminitis.*

COMPROMISED
Transport with Special Provisions

(See reverse for transport regulations)

- Horses that are blind in both eyes
- Very young foals or young orphan foals
- Lame horses (Classes 1,2; See reverse)
- Geriatric horses
- A horse that has any condition that could reduce the horse's ability to withstand the rigours of the trip

Special Provisions:

1. Compromised horses must only be transported locally and directly to the nearest suitable place where they can receive care and attention, or be humanely slaughtered or euthanized.
2. A compromised animal must be the last animal loaded and the first animal unloaded.
3. A compromised animal must be segregated from all other animals, or it may be penned with **one** familiar animal.

Note: To prevent undue suffering, other special provisions, such as additional bedding, may be required, depending on the condition of the compromised animal. Always ask a veterinarian if you are unsure about the appropriate special provision when moving a compromised animal. Animals that require special provisions must be segregated from other animals.

What is the Meaning of "Nearest Suitable Place"? Compromised animals that are fit for transport are not to go through auction markets or assembly yards. If compromised animals are to be sent to slaughter, they must not travel long distances to the slaughter facility, even if the only slaughter facility is far away. If local slaughter facilities are unavailable, animals should either be treated or be humanely euthanized. If an animal becomes compromised during the journey, consider the nearest suitable place (that is, a nearby veterinary hospital, farm, auction market or assembly yard, slaughter plant) where the animal can receive care or be euthanized.

Content for the Transport Decision Tree was created by the Equine Code Development Committee and is based on the Health of Animals Regulations.

Transport Decision Tree (continued)

Guidelines for Dealing with Compromised Horses

Federal Transport Regulations (as of 2012)

www.inspection.gc.ca

DO

- Segregate animals of different species or substantially different weights and ages; or if incompatible by nature (i.e., stallions, jacks); mares with suckling foals; and horses with shoes on their hind legs.
- Ensure that animals segregated in trucks receive extra protection from cold and wind chill; supply ample bedding.
- Provide proper ventilation, drainage and absorption of urine.
- Have sufficient headroom for animals to stand in a natural position.
- Either strew the vehicle with sand or have the vehicle fitted with safe foot-holds, in addition to proper bedding.
- Ensure that animals unloaded for feed, water and rest remain at the rest stop for a minimum of five hours or longer to ensure all animals receive feed and water.

DO NOT

- Continue to transport an animal that is injured, becomes ill, or is otherwise unfit to travel beyond the nearest place it can be treated.
- Mishandle an animal at loading or unloading.
- Use electric goads or prods.
- Load or unload animals in a way that would cause injury or undue suffering.
- Crowd animals to such an extent as to cause injury or undue suffering.
- Transport livestock in trailers not designed for the safe handling of that species or class of livestock.

Lameness Classes

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

Transport as Soon as Possible

Class 1

Visibly lame but can keep up with the group.

Class 2

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

Do Not Load or Transport*

Class 3

Requires assistance to rise, but can walk freely.

Class 4

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

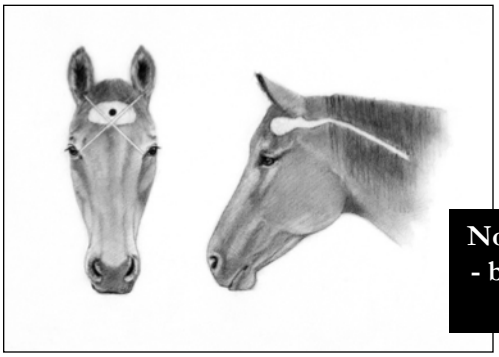
Class 5

Unable to rise or remain standing.

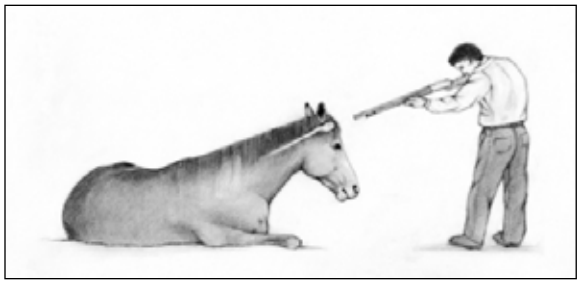
*** Any animal, including Lameness Classes 3, 4 or 5, may be transported for veterinary treatment on the advice of a veterinarian.**

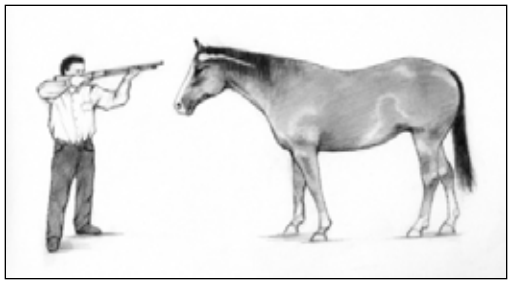
Content for the Transport Decision Tree was created by the Equine Code Development Committee and is based on the Health of Animals Regulations.

Anatomical Landmarks for Euthanasia



Not Between the Eyes! - but above the eyes as illustrated.





In horses, the brain is situated high in the head. The correct point of entry of the bullet or captive bolt is approximately 2.5cm (1in) above the intersection of two diagonal lines each running from the inside corner of the eye to the base of the opposite ear (see top photo). Ideally, the firearm or captive bolt should be angled so the bullet follows the angle of the neck or the spine.

Proper positioning of the firearm or penetrating captive bolt is essential in order to ensure a quick death. When euthanasia is performed by gunshot, the firearm should be held within 15-30cm (6-12in) of the point of entry. When performed by penetrating captive bolt, the device must be held in contact against the head at the correct anatomical site.

Horses may require restraint in order to facilitate safe and effective euthanasia, particularly if using a penetrating captive bolt (options include a halter and lead rope or bridle).

Refer also to *Appendix J-Technical Guidelines for Euthanasia Methods*, for other important details.

Image Source: Images developed by the Alberta Equine Welfare Group for the booklet "Humane Handling Guidelines for Horses – Standards for the Care of Unfit Animals" available for download under Resources at www.horsewelfare.ca.

Technical Guidelines for Euthanasia Methods

Important Safety Guidelines

- Be aware that if euthanizing a standing horse by gunshot, the horse may lunge forward or rear up when shot.
- **If euthanizing a horse by gunshot, the bullet may ricochet or pass through the horse. Therefore, it is very important to ensure no person or other animal is within range.**

Guidelines for Euthanizing a Horse by Free Bullet

- **It is imperative to use a sufficiently powered firearm**. For horses heavier than 180kg (400lb) select a gun that provides a minimum of 1,000 ft lbs of muzzle energy. This information can be found on the box of the ammunition used with your firearm. Most handguns are NOT sufficient. A .22 calibre gun may not be a sufficiently powered firearm for horses. Appropriate options for horses include the 20, 16 and 12 gauge shotgun. Slugs are the best choice, No. 4, 5, or 6 birdshot is ONLY acceptable for close-range. Woods et al. (2010), listed in the References, provides further details.

Guidelines for Euthanizing a Horse by Penetrating Captive Bolt Gun

- **It is imperative to use a penetrating captive bolt gun that is designed to euthanize horses and is the correct caliber**. Some models are NOT designed to euthanize a horse - they merely stun the horse and a secondary step is required. There are captive bolt guns on the market now designed specifically for euthanasia on farm. A .25 calibre with an extended bolt is the most effective captive bolt gun for single-step euthanasia. If a less powerful captive bolt gun is used, there is a risk that the horse may only be temporarily stunned and a secondary method will be required. Woods et al. (2010), listed in the References, provides further details.
- Proper maintenance in accordance with the manufacturer's instructions is also essential.

Secondary Steps

- Acceptable secondary steps include: a second shot by free bullet or penetrating captive bolt and a second injection (administered by a veterinarian). Cardiac puncture, bleeding, and pithing (insertion of a rod into the hole created by the captive bolt and agitation of the rod to destroy the brain) are acceptable secondary steps ONLY if the animal is confirmed unconscious.
- If using a penetrating captive bolt gun, the requirement for a secondary step depends on the model used.
- Secondary steps performed on an unconscious animal should be performed within 30 seconds of the first step (with the exception of a second injection, which is at the discretion of the veterinarian).

Resources for Further Information

BIOSECURITY

Alberta Veterinary Medical Association and Alberta Equestrian Federation. *Equine Biosecurity Principles and Best Practices*. Available at: http://abvma.ca/resources/documents/EquineBiosecurityPrinciplesandBestPracticesguide.pdf

Equine Guelph. *Biosecurity for horse owners: Information Sheet*. Available at: http://www.equineguelph.ca/pdf/facts/bio_security_info_FINAL.pdf

Ontario Ministry of Agriculture, Food and Rural Affairs. *Preventing disease spread - personal hygiene and disinfectants around horse barns*. Available at: http://www.omafra.gov.on.ca/english/livestock/horses/facts/prev-disease-spread.htm

Saskatchewan Horse Federation & Saskatchewan Ministry of Agriculture. Horse Biosecurity Guidebook. Available at: www.agriculture.gov.sk.ca/Default.aspx?DN=9d0ca434-3628-4e37-bf65-cf014fd933a9

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Svendsen E.D., Duncan J. & Hadrill D. (2008) *The Professional Handbook of the Donkey 4th ed*. Whittet Books Limited.

FACILITIES, PASTURE MANAGEMENT AND EMERGENCY PREPAREDNESS

Alberta Agriculture, Food and Rural Development (2003) *Horse Handling Facilities*. Agdex 460/722-1. Copies are available for purchase by phone 1 (800) 292-5697 or by online purchase: http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex45

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Horse Council British Columbia. *Disaster Preparedness Guidelines for Horse Owners*. Available at: http://www.hcbc.ca/_customelements/uploadedResources/DisPrepGuidelines10.pdf

Horse Council British Columbia (2005) *Fire Prevention for your Barn: Barn Safety Checklist*. Available at: http://www.hcbc.ca/_customelements/uploadedResources/Barn20Safety20Checklist.pdf

Ontario Ministry of Agriculture, Food and Rural Affairs (2010) *Horse Barn Ventilation*. Agdex 717/460. Available at: http://www.omafra.gov.on.ca/english/engineer/facts/10-059.pdf

Ontario Racing Commission. *Heat Exhaustion Action Plan*. Available at: http://www.ontarioracingcommission.ca/uploadedFiles/Heat%20Exhaustion%20poster.pdf

Resources for Further Information (continued)

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Alberta Agriculture, Food and Rural Development. *What's the Score? Body Condition Scoring for Livestock*. CD-ROM. 400/40-1. Copies available to order online at: http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex9622

American Association of Equine Practitioners. *Horse Health Articles*. Available at: http://www.aaep.org/horse_health.htm

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Canadian Food Inspection Agency. *Equine Infectious Anemia - Factsheet*. Available at: http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/eia/fact-sheet/eng/1329554028418/1329554166646

Canadian Food Inspection Agency. *Meat Hygiene Manual of Procedures, Chapter 17, Annex E*. Available at: http://www.inspection.gc.ca/food/meat-and-poultry-products/manual-of-procedures/eng/1300125426052/1300125482318

Equine Canada. *Owners need to test for Equine Infectious Anemia*. Available at: http://www.equinecanada.ca/industry/index.php?option=com_content&view=category&id=280&Itemid=607&lang=en

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McKendrick S., Evans P. & Bagley C. (2010) *Proper Basic Hoof Care*. Utah State University Extension. AG/Equine/2006-03. Available at: http://extension.usu.edu/files/publications/publication/AG_Equine_2006-03.pdf

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Alberta Equine Welfare Group (2006) *Humane Handling Guidelines for Horses: Standards for the care of unfit horses*. Available at: http://www.horsewelfare.ca/images/stories/pdf/horseguidelines.pdf

Certified Horsemanship Association (2002) *Composite Horsemanship Manual*. Available for purchase at: http://cha-ahse.org/store/

Hitzler, P & My Horse University. *Horse Handling and Restraint Techniques*. DVD. Available for purchase at: http://www.myhorseuniversity.com/node/542

International Society for Equitation Science. *Principles of Learning Theory in Equitation*. Available at: http://www.equitationscience.com/learning-theory-in-equitation

Pennsylvania University Veterinary Medicine. *Equine Restraint*. Available at: http://research.vet.upenn.edu/Equine/Restraint/tabid/3750/Default.aspx

Resources for Further Information (continued)

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Equi-Analytical Laboratories (n.d.) *Profiling Feed for Better Nutritio*n. Available at: http://www.equi-analytical.com/

Safergrass.org (n.d.) *Are You Feeding your Horse like a Cow?* Available at: http://www.safergrass.org

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Horse Welfare Alliance of Canada and Alberta Farm Animal Care (n.d.) *Caregivers' guide to rehabilitating neglected horses*. Available at: http://www.horsewelfare.ca/horse-welfare-resources/147-rehabilitating-neglected-horses

Unwanted Horse Coalition (n.d.) *Own responsibly: Guidance for current and potential horse owners from the Unwanted Horse Coalition*. Available at: www.unwantedhorsecoalition.org/resources/book_web.pdf

Wright B. & Rietveld G. (2007) *Selecting Your Horse - Factsheet*. Ontario Ministry of Food, Agriculture and Rural Affairs. Agdex 460/11. Available at: www.omafra.gov.on.ca/english/livestock/horses/facts/07-033.pdf

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Canadian Food Inspection Agency (2013) *Transportation of Animals Program Compromised Animals Policy*. Available: http://www.inspection.gc.ca/english/anima/trans/polie.shtml. Accessed May 23, 2012.

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Government of Canada (1990) *Health of Animals Regulations*. C.R.C. c. 296. Available at: http://laws-lois.justice.gc.ca/PDF/H-3.3.pdf

Woods J. (2010) *Horse Hauling Course: take a responsible approach to horse hauling*. Cochrane AB: Horse Welfare Alliance of Canada. Information on this course is available at: http://www.horsewelfare.ca/training-events/162-horse-hauling-course

RESOURCES AVAILABLE IN FRENCH

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The contribution of all committee members is greatly appreciated. Thank you Susan Stewart, who served as the Code of Practice Staff Liaison, as well as Ron Barker and Caroline Ramsay who served as Code Development Secretaries. The Scientific Committee wishes to acknowledge and thank Stephanie Yue Cottee PhD for her work as Research Writer. Biographies of all members of the Code Development Committee are available on Equine Canada's website (www.equinecanada.ca/code).

Summary of Code Requirements

The following is a list of the Requirements within the equine Code of Practice. Refer to the cited Code section for further context about the Requirements.

SECTION 1 Duty of Care

- Owners must have the resources for and knowledge of the basics of care as stated in this Code and ensure such care is provided.
- Principal caregivers must be familiar with and provide the basics of care as stated in this Code.

SECTION 2 Facilities and Housing

2.1 Pastures and Yards

- At a minimum, each horse must have enough space to move easily, walk forward, turn around with ease, and lie down in a normal resting posture. There must also be sufficient space for subordinate horses to escape aggression.
- In muddy conditions horses must, at a minimum, have access to a mud-free, well-drained area in the pasture/yard on which to stand and lie down.
- The application of fertilizers, pesticides, herbicides and farm manure must be timed to prevent any health risks to grazing horses or contamination of ground water.

2.1.2 Shade and Outdoor Shelter

- Horses must have access to shelter (constructed or natural) that protects them from the harmful effects of extreme weather conditions.
- Promptly assist individual horses that are showing signs of heat or cold stress.
- If blankets are used, the condition of the horse beneath the blankets must be examined at least weekly.
- Blankets must be appropriate for the weather conditions and not result in heat stress.

2.1.3 Mixing and New Arrivals

- Horses kept in groups must be managed in a way that minimizes the risk of injury.

2.1.4 Fences and Gates

- Fences must be constructed and maintained to minimize the risk of injury and must be strong enough to contain horses. Refer to municipal fencing by-laws, if applicable.
- Electric fences must be installed according to the manufacturer's specifications. All power units for electric fences must be designed to prevent short circuits and/or stray voltage.
- Temporary electric fences used for strip grazing or pasture rotation are not an acceptable permanent perimeter fence for horses.

2.2.3 Sick or Injured Horses

- Owners must have the ability to segregate sick or injured horses for treatment.
- If sick pens or stalls are used, they must be equipped with a source of feed and water and be cleaned between uses.

2.3 Indoor Housing

- Facilities must be designed and maintained to minimize the risk of injury.

Summary of Code Requirements (continued)

2.3.1 Indoor Space Allowance

- For indoor facilities: each horse must have enough space to lie down in a normal resting posture, stand with the head fully raised, walk forward and turn around with ease. For tie stalls, each horse must have enough space to lie down in a normal resting posture, stand with the head fully raised, and step forward in comfort.
- For group housing, there must also be sufficient space for subordinate horses to escape aggression.

2.3.2 Indoor Lighting

- For horses kept indoors without natural light, artificial lighting must be provided during the day. Keeping horses in continuous darkness is not acceptable.

2.3.3 Indoor Flooring

- Provide non-slip surfaces in stalls and alleyways to reduce the risk of horses slipping or falling.

2.3.4 Indoor Bedding

- Ensure stalls are kept clean. Horses must be provided with a dry lying area. The area must also be of a design or texture that will not bruise, cut or otherwise injure the horse. Concrete or hard rubber mats without bedding are not acceptable surfaces.
- Bedding must be non-toxic.

2.3.5 Indoor Air Quality and Humidity

- Air quality in barns must be maintained to prevent the buildup of noxious gases, dust and moisture.
- Ventilation must effectively maintain good indoor air quality.
- The concentration of ammonia in the air must not exceed 25ppm. Options for assessing ammonia concentration are provided in *Section 2.3.5*.

2.4 Safety and Emergencies

- Develop an emergency action plan for emergencies that may occur in your area.
- Toxic materials must be securely stored such that horses cannot gain access to them.

SECTION 3 Feed and Water

3.1 Water

- Horses must have access to safe, palatable and clean water in quantities to maintain health and vigour.
- In extreme weather conditions (cold or hot), special attention must be paid to ensure water availability, access and intake.
- Water troughs, containers and any automatic watering devices must be cleaned regularly and maintained in working order with no sharp or abrasive edges.

3.2 Safety of Feedstuffs

- Horses must have daily access to forage that is free from visible mould and has minimal dust.
- Horses must only receive feedstuffs that are appropriate for the species.
- Concentrates must be stored in a secure manner that prevents horses from overeating.

Summary of Code Requirements (continued)

3.4 Nutritional Content and Feed Management

- Horses must receive a diet that is adequate for maintaining health and vigour.
- The daily ration must address the horse's maintenance and activity needs and other factors relevant to individual horses and the environment.
- Horses must have access to salt either provided in the ration or free access (a block or loose salt).

3.4.2 Growing Horses

- Growing horses must receive a diet that is adequate for maintaining health, growth and vigour.

3.4.3 Horses in Work

- Horses in work must receive a diet that is adequate for maintaining health and vigour.

3.4.4 Stallions

- Stallions must receive a diet that is adequate for maintaining health and vigour.

3.4.5 Reproductive Mares and Jennets

- Pregnant and lactating mares/jennets must receive a diet that is adequate for maintaining health and vigour and that allows the mares/jennets to provide adequate nutrition to the foal.

3.4.6 Geriatric Horses

- Geriatric horses must receive a diet that is adequate for maintaining health and vigour.
- Refer to *Section 4.5-Body Condition Scoring* for other relevant Requirements.

SECTION 4 Health Management

4.1 Health Management Plans

- Horses must be observed as often as required to maintain their health and well-being.
- Purchase medications and veterinary pharmaceuticals from regulated, reputable sources. Refer to provincial and federal regulations.
- Records or receipts of treatments provided must be available.

4.1.3 Parasite Management

- A parasite control program to prevent parasite related disease must be in place. This Requirement applies to internal and external parasites.

4.2 Sick, Injured or Compromised Horses

- Equines that are sick, injured or in pain must receive appropriate treatment without delay or be euthanized without delay. Refer also to *Section 10-Euthanasia.*
- For sick, injured or compromised horses that are not showing improvement, horse owners or caregivers must, without delay, obtain veterinary advice on appropriate care and treatment or make arrangements for euthanasia.
- Records or receipts for treatments provided must be available.
- Appropriate authorities must be advised of suspected or confirmed cases of federally reportable disease, such as Equine Infectious Anemia. Refer to the Canadian Food Inspection Agency (www.inspection.gc.ca).

4.3 Dental Care

- Horses showing signs of dental problems must be examined and treated.
- Dental care procedures must only be performed by a veterinarian or competent individual working under direct veterinary supervision. Refer to provincial regulations.

Summary of Code Requirements (continued)

4.4 Lameness

- Lameness must be addressed either through specific therapies or changes in management or workload.

4.4.1 Laminitis (Founder)

- Horses with laminitis must receive appropriate lifelong management and treatment, which may include medications, dietary management and hoof care.

4.5 Body Condition Scoring

- For horses and ponies: corrective action must be taken at a BCS of 3 or lower and at a BCS of 8 or higher (on the 1-9 scale).* Veterinary advice must be obtained if animals do not respond to the corrective action. Refer to *Appendix D*.
- For donkeys and mules: corrective action must be taken at a BCS of 2 or lower and at a BCS of 4 or higher (on the 1-5 scale). Veterinary advice must be obtained if animals do not respond to the corrective action. Refer to *Appendix E*.
- Veterinary advice must be obtained for geriatric equines that are emaciated (i.e. BCS of 1 or 2 out of 9 for horses and ponies; BCS of 1 out of 5 for donkeys and mules).
- Equines must not be starved or prevented from eating for prolonged periods in order to reduce BCS - the change in feed to reduce BCS must be gradual.
  *With the exception of horses in feedlots that are free from health conditions associated with obesity.

SECTION 5 Feedlot Management

5.1 Handling at Loading and Unloading

- The ground in the holding pen must be well-drained and non-slip.
- Horses must be handled in a manner that does not subject them to avoidable pain or avoidable injury.

5.2 New Arrivals

- Upon arrival to the feedlot, horses must be individually assessed for health and well-being and must be provided with water and good quality forage.
- Horses in groups must be managed in a way to minimize the risk of injury.

5.3 Feeding

- Feedlot horses must receive a diet that is adequate for maintaining health and vigour.
- Feedlot horses must have daily access to forage that is free from visible mould and has minimal dust.

5.4 Health Management in the Feedlot

- Feedlot owners must establish and maintain a Veterinary-Client-Patient Relationship (VCPR) with a practicing veterinarian.
- A written biosecurity and disease management plan must be in place and developed with a veterinarian.
- Feedlot horses must be observed at least once a day for health and well-being.
- Feedlot horses requiring medical treatment must receive such treatment and be identified. Feedlot horses to be held over for a drug residue withdrawal period must be sufficiently healthy and sound to withstand this period without undue suffering.

Summary of Code Requirements (continued)

- Records or receipts of treatments provided must be available.
- Drug withdrawal periods must be observed. For information on drug withdrawal periods, consult a veterinarian or the Meat Hygiene Manual of Procedures (*Appendix K* provides a reference for this manual).
- Hospital pens must be available and must provide shelter, bedding, dryness, and a source of feed and water. Hospital pens must also be cleaned between uses.
- Refer also to the Requirements in *Section 4-Health Management*.

5.5 Pen Condition and Shelter

- Feedlot owners must have a plan for mud management and access to any equipment necessary to implement the plan.
- A dry lying area must be available in each pen.

5.5.1 Stocking Density

- At a minimum, each horse must have enough space to move easily, walk forward, turn around with ease, and lie down in a normal resting posture. There must also be sufficient space for subordinate horses to escape aggression.

SECTION 6 Husbandry Practices

6.1 Turnout, Exercise and Social Opportunities

- Horses must have some form of exercise or turnout unless under stall rest for medical reasons or severe environmental conditions make this temporarily impossible. *Section 6.1* provides explanations for exercise and turnout.

6.2 Behaviour and Handling

- Handlers must be familiar with equine behaviour and competent in humane handling techniques either through training, experience or mentorship.
- Horses must be handled in a manner that does not subject them to avoidable pain or avoidable injury.

6.2.1 Handling and Restraint Equipment

- Corrective action must be taken if restraint devices or equipment cause injury to horses.
- Tethering must not cause injury and must only be used if the horse is under supervision. The person applying the tether must be knowledgeable in its use. *Section 6.2.1* provides an explanation of tethers.
- Electric cattle prods must not be used for the routine movement or handling of horses on-farm or during loading/unloading. Discretion must be used in an individual extreme situation when animal or human safety is at immediate risk, but prods must never be used repeatedly or used on the face, anus or reproductive organs of horses.

6.3 Principles in Training and Learning Theory

- Horses must not be trained in a manner that subjects them to avoidable pain or that causes them injury as a direct result of the training method used. They must never be subjected to training methods which are abusive or intentionally injure the horse. This includes, but is not limited to, soring, excessive use of whips or forcing the horse's head position by tying the horse to a fixed object. The glossary provides a definition of soring.
- Horses must only undergo training that matches their physical capabilities and level of maturity.
- Equipment in use must be maintained in good repair and must fit the horse correctly.

Summary of Code Requirements (continued)

6.4 Methods of Identification

- Animal identification must be performed in a manner that causes the minimum of handling stress and pain, regardless of the method used.
- If branding is necessary, do not brand horses on the jaw/cheek.
- When registering new brands, select an approved site other than the jaw/cheek. Consult the appropriate provincial regulatory authorities, breed registry or sport council for more information.
- Horses must never be branded when they are wet.

6.5 Castration

- Castration of donkeys, mules, and mature horses must only be performed by a veterinarian.
- Horses with one or more retained testicle or other scrotal abnormalities (e.g. hernias) must only be castrated by a veterinarian.
- Provincial regulations that restrict castration of horses to licensed veterinarians must be followed.
- Where it is not prohibited by law, castration by a person who is not a licensed veterinarian must only be performed by a skilled operator and must meet the following requirements:
  - there is a valid Veterinary-Client-Patient Relationship with a licensed veterinarian who is willing to supply training (on the procedure and pain management), prescribe the required drugs for pain control, and provide interventions if needed.
  - the scrotal area must be examined to ensure normal scrotal anatomy. If there is evidence of an abnormality, castration must only be performed by a veterinarian.
  - the handling and restraint methods must not cause injury or unnecessary suffering.
  - pain control must be provided. At a minimum, this must include a local anesthetic and a non-steroidal anti-inflammatory drug. Castration must not begin until the local anesthetic has taken effect.
  - the horse must be monitored during and after the procedure and, if complications occur, a veterinarian must be contacted without delay.

6.6 Alterations of the Tail

- Tail nicking and blocking are unacceptable and must not be performed.
- Tail docking for cosmetic purposes is unacceptable and must not be performed. Refer also to provincial regulations on tail docking, if applicable.

6.7 Hoof Care

- Hooves must be trimmed and/or shod as often as is necessary to maintain hooves in functional condition. Whether shod or unshod, hooves must not be allowed to grow to excessive lengths causing injury or discomfort to the horse.

6.8 Grooming

- Horses must be free of debris where the saddle and harness are placed. The tack must also be free from debris before being placed on the horse.
- Burdocks causing discomfort or injury must be removed without delay.

SECTION 7 Reproductive Management

7.1 Responsible Breeding

- Do not breed horses unless you are familiar with and able to provide the basics of care as outlined in this Code for both the mares/jennets and foals.

Summary of Code Requirements (continued)

7.3 Care of the Pregnant Mare or Jennet

- Mares/jennets requiring medical care during gestation must receive such care.
- Pregnant mares/jennets must have some form of exercise or turnout unless under stall rest for medical reasons or severe environmental conditions make this temporarily impossible.

7.4 Foaling

- A plan must be in place for the foaling process, including a plan for getting prompt expert advice or help if needed.
- Mares and jennets close to foaling must be observed at least twice a day for health, well-being and signs of foaling.

7.5 Care of the Newborn Foal

- Newborn foals must be monitored to ensure they can rise and suck unassisted.
- Appropriate care must be provided without delay if abnormalities in the foal are observed.

7.5.1 Colostrum

- Foals must receive colostrum or alternative care to maintain their health and vigour.

7.5.2 Weaning

- Facilities or fencing used during weaning must be safe and made of strong materials free from protrusions.
- Corrective action must be taken if the foal or mare/jennet injures themselves attempting to reunite during weaning.

SECTION 8 Transportation

8.1.1 Fitness for Transport

- Horses must be individually assessed for fitness for transport before being transported. Evaluate fitness for transport in the context of each trip and all relevant factors (e.g. anticipated total trip duration from farm to final destination and prevailing weather conditions).
- Unfit horses must not be transported, except for veterinary diagnosis or treatment.
- Refer to *Appendix H-Transport Decision Tree.*

8.1.2 Preparing Horses for Transport

- If the expected duration of the horse's confinement is longer than 24 hours from the time of loading, the horse must be fed and watered within five hours before being loaded (31).

8.2 Loading and Unloading

- The requirements for loading and unloading procedures and equipment as described in the *Health of Animals Regulations* must be complied with.[1]
- Mares and jennets must not be transported if they are likely to give birth during the trip.
- Every mare with its suckling offspring must be segregated from all other animals during transport.
- Every mature stallion must be segregated from all other animals during transport.
- Horses must be individually assessed before loading and upon arrival back to the farm.
- Refer to *Appendix H-Transport Decision Tree.*

1 The Health of Animals Regulations prohibit loading and unloading an animal in a way likely to cause injury or undue suffering. The Regulations also require that ramps, chutes and other equipment used for loading and unloading animals:
- be maintained and used so as not to cause injury or undue suffering to animals
- have sides of sufficient strength and height to prevent animals from falling off the ramp or other equipment
- provide animals with secure footing on ramps, inside the trailer and in the loading area
- have no unprotected gap between the ramp and the vehicle.

Summary of Code Requirements (continued)

8.2.2 On-Farm Management Post-Transport

- Horses must be provided with water upon arrival to the farm.

SECTION 9 Change or End of Career

- The welfare of the horse must be of paramount importance when making change or end of career decisions.

SECTION 10 Euthanasia

10.1 Timelines for Euthanasia

- Equines that are sick, injured or in pain must receive appropriate treatment without delay or be euthanized without delay.
- For sick, injured or compromised horses that are not showing improvement, horse owners or caregivers must, without delay, obtain veterinary advice on appropriate care and treatment or make arrangements for euthanasia.

10.2 Methods

- An acceptable method of euthanasia must be used.
- Euthanasia must be performed by persons knowledgeable in the method used for equines.
- Disposal must be in accordance with provincial and municipal regulations.

10.3 Confirmation of Death

- Confirm unconsciousness immediately when it is safe to do so.
- Have a secondary euthanasia step or method available.
- Confirm death before moving or leaving the animal.