

# LIVESTOCK HANDLING AND BEHAVIOUR

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**MCGILL UNIVERSITY**

Macdonald Campus

Faculty of Agricultural and Environmental Sciences

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# INTRODUCTION

The original Livestock Handling and Behaviour training program for McGill University Faculty of Agricultural and Environmental Sciences was developed and delivered for the first time in 2003.

## ABOUT THE AUTHOR

Jennifer Woods is a livestock handling specialist based out of Alberta, Canada. Jennifer obtained her undergrad degree in Animal Science at Colorado State University and her masters degree in Veterinary Preventative Medicine from Iowa State University. Jennifer has over 25 years experience in the livestock industry and has collaborated with the livestock industry since 1998 in the areas of animal welfare and care. Her areas of expertise include euthanasia, animal handling and behavior, animal welfare auditing and assessing (slaughter, farm, exhibitions/ events, feedlot and transportation), livestock emergency response, transportation, and facility design. Jennifer's work has taken her all over North America, across Europe, South America, and down to Australia

An Animal Care and Welfare specialist based out of Alberta, Canada, Woods obtained her undergraduate degree in Animal Science at Colorado State University and her Masters degree in Veterinary Preventative Medicine - Animal Welfare from Iowa State University. She has over 25 years experience with production livestock and has been collaborating with the livestock industry in all aspects of animal welfare and care since 1998. She has been a professional Animal Auditor Certification Organization (PAACO) certified auditor for all five species groups since 2007 and is the lead trainer and developer for Canadian Livestock Transport (CLT) Certification program. Her areas of expertise include euthanasia, animal handling and behavior, animal welfare auditing and assessing (slaughter, farm, feedlot and transportation), livestock emergency response, transportation and facility design. Jennifer's work has taken her all over North America, across Europe, South America, into Asia and down to Australia. Her work has been used globally to audit, train and improve farm animal welfare.

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# SECTION 1: ANIMAL WELFARE

Why is animal welfare important to you?

- It is the right thing to do
- Good welfare promotes optimum production and minimizes loss
- Consumers and society expect it
- The law requires it!

Animal Welfare is the physical and psychological well-being of animals and can be most easily defined as what the animal is experiencing and how they are coping with their environment. As a stock person it is your responsibility to continually strive to provide the highest level of animal welfare to the animals in your care.

## You provide good animal welfare by:

- ▶ Providing safe and protective shelter and housing.
- ▶ Providing feed and water that meet their needs.
- ▶ Providing health care - preventative, diagnostic and treatment.
- ▶ Handling all animals humanely, with care and no abusive handling.

## CODE OF PRACTICE FOR THE CARE AND HANDLING OF FARM ANIMALS

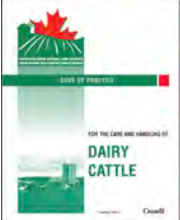


The Code of Practice are nationally developed guidelines for the care and handling of farm animals in Canada. The Code serve as our national understanding of animal care requirements and recommended practices. The Code Development Committee and the Scientific Committee work together to develop a science- and consensus-based Code. The result is a Code that is scientifically informed, practical, and reflects societal expectations for responsible farm animal care.



Broad representation and expertise on each Code Development Committee ensures collaborative Code development. The Code development process fosters relationships and understanding amongst all partners involved in farmed animal care.

Stakeholder commitment is key to ensure quality animal care standards are established and implemented. Stakeholders include farmers/producers, transporters, veterinarians, animal welfare and enforcement agencies, retail and food service organizations, processors, governments and researchers.



Code of Practice are intended to promote sound management and welfare practices through recommendations and requirements for housing, care, transportation, processing and other animal husbandry practices. Code serve as educational tools, reference materials for regulations, and the foundation for animal care assessment programs.

**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.

Copies of the Code can be found at <http://www.nfacc.ca/Code-of-practice>

## REGULATIONS

Those tasked with the care of livestock must be aware of and comply with all regulations pertaining to care and slaughter of animals. There are both federal regulations and provincial acts that oversee animal welfare in Canada. These regulations include the Health of Animals Act and Regulations, Criminal Code of Canada and provincial animal care acts. Federal Acts are most often enforced by the Canadian Food Inspection Association and RCMP. Provincial Acts are most enforced by the provincial SPCA, provincial police, provincial meat inspectors or other government appointed agencies.

## ANIMAL WELFARE AUDITS

Animal welfare audits have become common place across the slaughter industry. Compliance to audit standards are requirements for labeling programs, retailers, restaurants, government programs and industry programs.

Audits and or assessments verify compliance of farmers and slaughter facilities to industry standards and regulations. They are most often performed by trained third party auditors. They have become an important part of all livestock production as they allow for verification and assurance to customers and the public that we are doing the right by the animals in our care. They are also an excellent management tool for continued improvement.





# SECTION 2: GENERAL ANIMAL BEHAVIOUR AND HANDLING

## GENERAL LIVESTOCK BEHAVIOUR

Understanding animal behaviour is the key to effective and low stress livestock handling. Livestock, as grazing species are prey animals, whereas humans are predators.

Livestock are very unpredictable because they do not think - they react. They are reacting to whatever is happening at that given time. They do not plan their reaction, they do not think about it, they just react. As humans, we need to be on continual alert and watching for things they may react to keeping in mind it may be something we don't even see or hear.

### Common prey animal traits include:

**Strong herd instinct:** They will panic when isolated or separated from the herd.

**Monocular vision:** Due to eye placement on the side of their head - this type of vision makes their depth perception very limited with their heads up. They will balk at such things as shadows, water puddles and lines on the ground.

**They think in pictures:** Visual imprints.

**Motivated by fear and food:** These are the two main things that livestock (prey animals) need to survive. These motivators can be utilized to move them.

**Reactive to rapid movement :** Rapid movement is perceived to be a predator and will cause them to be fearful and flee.

Four basic types of animal behaviour:

1. Instinctual - Born knowing how to do
2. Learned - Livestock have the ability to learn and retain memories
3. Dominant Aggression
4. Abnormal - often feed based

### HERD INSTINCT

Livestock like to follow the leader - they are motivated to keep continual visual contact with each other.

When separated from the herd or flock, they will panic.

Social ranking can determine an animals position within the herd. Animals with high social ranking will rarely lead the herd, they travel in the middle or towards the end of the herd.

Each animal will attempt to push itself into the middle of the group where it will be safe from predators.



## SENSES

**Animals have a sharp sense of sight, smell and hearing and are very dependent on them for survival.**



### Ears/Hearing:

- Can hear pitches that humans cannot hear.
- More sensitive to higher pitches.

### Smell/Olfactory:

- Rely on scent/smell for identification of young, other livestock , handlers
- Scent is indicator of heat/breeding opportunity
- Can smell predators/threats.

### Eyes/Sight:

- The positioning of their eyes (high up on the sides of their head) enables them to move together as a herd, while constantly scanning their surroundings for predators or other dangers.
- Livestock have a wide angle of vision ranging from 270° - 360° depending on species. They have excellent peripheral vision and can see behind them without turning their head.
- Due to eye placement, they have monocular vision. This means their eyes work independently of each other. Monocular vision limits depth perception, meaning livestock have limited ability to detect distance and depth.
- The lack of depth perception causes them to balk and refuse to walk through a puddle, over a shadow or on a change of surface. They have to stop and drop their head to determine the depth.
- Livestock have a tendency to move from a dimly lit area to a brighter area, granted the light is not glaring. Though they are reluctant to move into dark spaces but will calm once their eyes have adjusted to the darkness.
- Livestock are not colourblind, they can see the contrast in colour (light and dark) changes.
- Livestock do not easily recognize human faces. They are more likely to recognize places, smells, voices, distinctive clothing and certain objects.

**Temperament** is a combination of genetics and environmental factors.

- Genetic influences interact with early experiences to shape adult patterns of behaviour.
- Each animal is an individual and will react differently.
- Leaner, finer boned, smooth bodied animals generally will have more excitable temperaments.
- Heavy boned, muscular animals with more fat cover will generally be calmer in nature.
- One excitable animal can excite the calm animals.
- Habitual offenders will reoffend. Ship them - no matter how good of a mother or producer she is.
- Livestock often become aggressive when protecting a territory. This behaviour is often seen during feeding.

<b>Animal Temperament Traits</b>	
<b>Calm Temperant</b>	<b>High Reactive/Excitable</b>
Habituate easier	Are more dangerous
Let you know what they are afraid of	Have lower gain and production
Less dangerous	Are sick more often
Higher producing	More prone to injury
Have less illness	Constantly rotate ear position
Does not spook as easily	Raise head quickly when grazing
	Excessively flick their tail
	Flinch when they are touched
	Move away sooner when approached
	More attracted to novelty
	More reactive in the startle response



## FEAR

Grazing animals are a prey species, and fear motivates them to escape from danger. When they become agitated during handling, it is usually due to fear.

Frightened animals are unpredictable and dangerous.

Fear is the strongest stressor of animals.

Fear is most often invoked when:

- They are cornered
- They are separated from their herd or flock
- They are somewhere unfamiliar
- “Predators” are approaching

Fear can be a learned behaviour (imprinted) based on experiences (i.e. bad handling, pain).

Livestock will retain fear memories until they are conditioned not to fear an event or object. It is easier to prevent the fear, then recondition the animal.

### When livestock become frightened, they will:

- Freeze and stand completely still
- Mill around and bunch tightly together
- Flee
- Fight
- Die



# COMMUNICATION

Body language is the primary communication source between the handler and the animals.

## Four Forms of Communication


Vocal

Olfactory (Smell)

Visual

Touch

**Dominance**



	A	B	C	D	E	F	G	H
Horse	x				x			
Cattle	x	x	xx					(xx)
Bison	x					x	x	x
Sheep			x	xx	x	xx		x
Goats		x	x					

Legend: A = medial presentation of head/horns; B = low presentation of head/horns; C = hunch; D = neck stretch; E = lifted nose posture; F = erect posture with nose pointing horizontally forward; G = erect stance with moderately erected neck and nose pointing downward; H = sideways turn of the head.  
 x = occasionally used; xx = frequently used. (xx) = added, based upon my own observations.  
 Burt Smith, Moving 'Em, 1998

## Categories for Visual Signals

Threat

Dominance

Submission


Care giving

Caregiving

Investigate

Movement

**Threat**



	A	B	C	D	E	F	G
Horses	x	xx	xx	x	x	xx	
Cattle	xx		x		xx*		x
Bison	xx				x	x	
Sheep	x	xx	xx	x	xx	x	
Goats	x	xx	x	xx	xx	x	

Legend: A = pawing ground; B = rising on hind legs; C = erect posture; D = high presentation of head/horns; E = medial presentation of head/horns; F = head low; G = kneeling.  
 x = occasionally used; xx = frequently used. xx\* = my observations indicate that a low presentation of the horns is more of a threat than a medial presentation, similar to observations by Schoeth.  
 Burt Smith, Moving 'Em, 1998

## Visual Messages Include

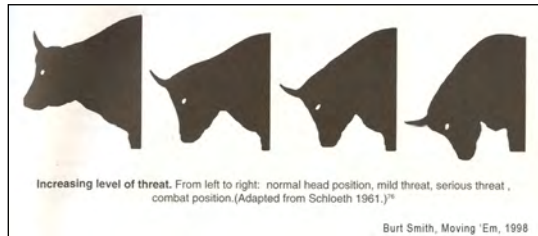
Stance

Head Position

Neck Position

Ear Position

Tail Position



## TOP 12 LIVESTOCK STRESSORS

As a stock person, it is important that you are aware of the activities or events that cause elevated stress or distress in livestock. Though you are not able to eliminate stress, by understanding what the likely triggers of stress are, you will be able to reduce the level of stress they experience.

Effects of stress on livestock includes reduced weight gain, poor reproductive performance, reduced ability to fight disease, meat quality (dark cutters in cattle and pale, soft and exudative (PSE) in pork); food safety implications and increased chances of injury or death.

### STRESS POINT #1 - ISOLATION

- Isolation is one of the strongest stressors of animals and should be avoided.
- They will calm quicker if left in a herd.
- They may readily play "follow the leader" when together making them easier to move.
- When treating livestock, it is best to bring a buddy or two in with the animal that is to be treated.
- Animals should always have a companion with them.
- Animals with companions will learn quicker than isolated ones.
- Do not leave an animal, especially a nervous one, alone in a pen or building. They can destroy the facilities and injure themselves trying to escape.

### STRESS POINT #2 - ROUGH HANDLING

- Handling has one of the biggest impact on livestock stress.
- Shocking or hitting dairy a cow will lower her milk production by 10%.
- Electric prods increase the heart rate of pigs. Sows fearful of people avg. six less piglets per litter.
- Always practice low stress handling methods.

### STRESS POINT #3 - PROCESSING

- Branding, vaccinating, dehorning, tail trimming and castrating are very stressful for animals.
- Limit the number of people present. Keep quiet and calm, making the experience as least stressful as possible.
- Design facilities for effective animal movement
- Restrain the animals for the shortest time possible.
- Always allow enough time to complete task. Do not rush.

### STRESS POINT #4 - ILLNESS AND TREATMENT

- Illness and injury can change the disposition of any animal.
- Repeated treatment can give an animal an attitude.
- Handling may become more difficult with each new session.
- Alternate injections site when giving repeated injections.



### **STRESS POINT #5 - DOMINANT AGRESSION**

- Mixing new animals will cause fighting until a social structure is established
- Animals of low social ranking will often experience slower gains.
- Animals should be introduced in groups to new herds or flocks, not as individuals.
- Aggressive animals that are constantly harassing other animals should be removed from the herd.

### **STRESS POINT #6 - TRANSPORT**

- Transport is very stressful for animals.
- Loading and unloading is often the most stressful part of transport for animals.
- Making sure animals are fit for the journey is critical to their welfare.
- Low stress handling techniques must be used at all times during loading and unloading.

### **STRESS POINT #7 - MATERNAL INSTINCT**

- Animals often show aggression when protecting their young. Most cow incidents involve a calf.
- This instinct can intensify when you come between the mother and the offspring, cause stress to the offspring or introduce 'visitors' to the area.
- Take note and notify all handlers of mothers that possess this strong maternal instinct.

### **STRESS POINT #8 - BREEDING**

- Rough handling during artificial insemination can raise body temperature and lower conception rates.
- Only experienced handlers should handle males while collecting semen. Animals get very excited and agitated. Dairy bulls are particularly excitable.

### **STRESS POINT #9 - CHANGE**

- Animals become extremely fearful and agitated when they are suddenly exposed to a new experience.
- New pens and facilities are stressful to an animal. Any change in environment will cause elevated stress levels.
- Upon arrival at a new facility, move them through the processing facilities once without doing any thing with them.
- A sudden slap, shove or loud noise will startle them.
- Animals are creatures of habit. They often do the same thing at the same time each day. They are calmer and will thrive when kept to a schedule.
- Something as simple as a handlers change of clothing can stress an animal, especially poultry and pigs. Handlers should wear clothing that is uniform in appearance.
- Allow animals time to familiarize themselves with new surroundings or circumstances. Do not ram novelty in their face.



## STRESS POINT #10 - WEATHER

- Avoid extreme changes in temperature in barns.
- Provide protection from both cold and heat extremes.
- Several livestock species are sensitive to temperature extremes. Extreme heat or cold can kill them.
- Change in barometric pressure and weather can affect an animals behaviour. They can become nervous and agitated.
- Animals are affected by temperature and humidity fluctuations. They are most active at the time of greatest change, such as dawn or dusk. They will be least active in the middle of the day or the middle of the night.



## STRESS POINT #11 - PREDATORS

- The presence of predators or perceived predators elevates their stress levels and triggers flee or fight.
- Livestock quite often see dogs as a foe, not a friend. Dogs must be well trained. Remove all uncontrollable or aggressive dogs from working area or from the field.
- Coyotes are the most prevalent predator in Canada.

## STRESS POINT #12 - ILLNESS OR INJURY

- Being ill or injured will elevate an animals stress as they feel more vulnerable.
- Illness and injury can change the disposition of any animal.
- Repeated treatments become more difficult.

Signs of Distress	
Tail swishing - rapidly	Heads up
Sweating	Pawing at the ground
Pacing	Constant ear movement
Increased standing	Increased urination and/or defecation
Increased vocalization	Reluctance to move
Trying to jump facilities	Charging
Teeth grinding	Raised hair

## GENERAL LIVESTOCK HANDLING

Animal handling difficulties normally arise from animal temperament problems, facility problems and personnel problems.

The three most common mistakes made by handlers are: rough handling, excessive prodding and overcrowding. Livestock behaviour is often reflective of the handling techniques applied by their care givers. Animals should be handled in a positive way and regularly. Roughly handled animals will be more flighty and fearful.

### As a handler you should do everything you can to minimize predator behaviour:

- Move slowly and methodically
- Do not run, jump or move rapidly
- Do not shout or yell
- Do not approach too closely
- Remain in their line of vision at all times

Allow new animals to get used to handlers and facilities.

Herd movement is controlled by your lead animal, not the animals at the back.

The two main motivators of livestock are fear and food.

Slow is fast.

If you spook animals, it will take 20-30 minutes to calm them down

If an animal is spooked or excitable - allow them to calm down before attempting to handle them.

Be confident — animals sense fear and hesitation and they will take advantage of it.

Never walk up behind an animal, whether it is standing up or lying down. They have very accurate aim when kicking.

Do not approach an animal from directly in front.

Do not overcrowd animals or put too much pressure on them.

Crowd tubs ideally are never more than 50% full, at the most 75% full. The crowd gate should be used to follow the cattle, not push them. When they are not moving, back off the gate.

Livestock respond best to visual pressure - not physical pressure.



## THE FLIGHT ZONE

The Flight Zone is the space or distance that an object, person or another animal has to be away from an animal or herd/flock before invoking movement. When the Flight Zone is penetrated, the animal will make the cautionary decision to move away who or what is approaching them.

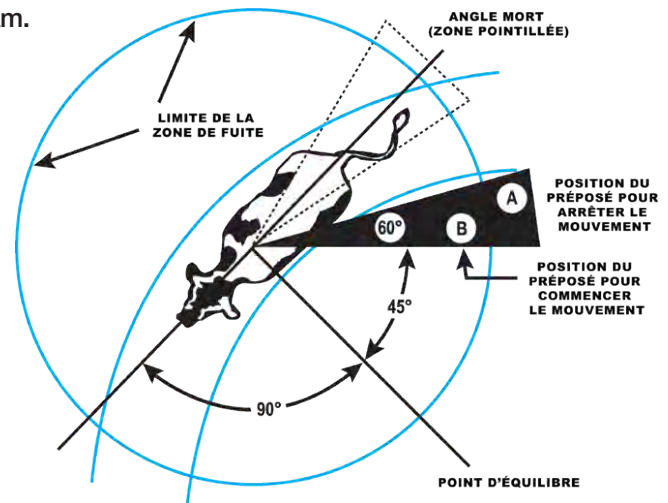
Flight zones are located around an animal and in the space above them. The Flight Zone is the stop and go mechanism of moving livestock anywhere within their line of vision.

To calmly move an animal, you must barely penetrate the zone. As you approach an animal, as soon as it begins to move away, you have entered the zone. This is the distance you want to stay away from the animal to keep it moving quietly. If you go in too deep, the animal will run or turn back on you. By riding the edge of the zone you will only need to step back to remove yourself from the zone and stop the animal.

Sight is the main sensory factor used by the animal in the Flight Zone. The animal has to see the pressure to respond to it. For this reason the positioning of the handler is important. You cannot stand in an animal's blind spot and expect it to respond. If the animal cannot see you, it will not move — it may turn around and look at the noise or attempt to kick you. The proper positioning of the handler is shown in the diagram.

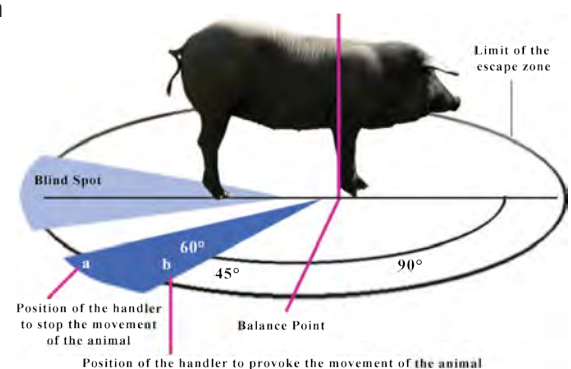
The size of the animal's Flight Zone depends on:

- Amount of contact with people
- Quality of human contact
- Genetics
- Familiarity
- Offspring
- Current environment



## POINT OF BALANCE

A second component of this concept is the Point of Balance (see diagrams). The Point of Balance is located in the shoulder area of an animal. If the pressure is coming from behind the Point of Balance the animal will go forward. If the pressure is in front of the Point of Balance, the animal will go backwards. In an alleyway or chute system, cattle should be worked from front to back.



## HANDLING TOOLS

All livestock handling tools should be used in a way that will not cause injury or distress to the animal.

Effective handling tools are often designed to apply visual and/or auditory pressure such as rattle paddle and flags.

Handling tools should have no objects on them that will injure the animals.

One of the more common handling tools are Rattle Paddles. They attract the attention of the animal, provide an extension of the arm of the handler and apply visual pressure. They must never be used to strike an animal.



## CATTLE

Cattle have a 300° - 330° range of vision and 25° - 50° of this is monocular vision. Their blind spots are directly in front and directly behind them.

They are most sensitive to shades of blue and yellow.

The strongest, dominant animal will stand in the middle of the herd - this leaves it protected by the barrier of other cattle.

Cattle will stampede if frightened. Their instinctive reaction to danger is to flee.

Beware of the area in front of the rear leg as they tend to kick forward and then back.

## DAIRY CATTLE



Dairy cattle need to be handled with extra care. Their large udders need to be protected from freezing. They also tend to bruise and cripple more easily than beef cattle.

Shocking or hitting a dairy cow can reduce her milk yield by 10%.

Dairy heifers should be allowed to explore and walk around the parlor before they freshen.

## BULLS

Even though bulls only account for a small percentage of the cattle population, they account for the majority of fatalities. Only 1 in 20 victims survive a bull attack.

Most bull attacks occur in stockyards or open fields.

A bull's mood can change dramatically in a matter of seconds.

Dairy bulls are very dangerous and extreme caution should be used.

Bulls raised in a group are gentler, than those raised alone. They do not realize they are bulls - a case of mistaken identity. Orphaned bulls should be placed in a social group or castrated no later than 6 weeks of age.

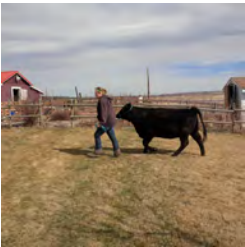
Always use the nose ring on a bull when available.

If possible on large dairy operations, a person should be hired to pet and handle calves. As they get older, someone should walk the pens daily in clothing that is similar to what the milkers will wear.

## HALTER BREAKING

- Each training session should be no longer than 10 - 15 minutes.
  - It is best to have two separate sessions spaced out during the day.
  - End each session on a good note.
  - Let them wear a halter and drag the lead for a few days
  - Do not tie the animal to a post and let them fight
  - Stop pulling on the halter as soon as the animal starts to move.
  - Do not use motor vehicles as means to halter break.
- Haltering cattle:**
- Halter from the left side.
  - When using a rope halter, loosen rope, place the top piece over and behind the ears first, then drop loop over nose. Tighten and adjust.
  - Do not lean over the head of animal when haltering.
  - When taking the halter off, wait until the animals head is down and he is calm.
  - Loosen the lead under the chin, remove the ears piece and then slide off the nose piece.

## LEADING AN ANIMAL:



- Always lead on the left side.
- Never tie the lead to your body.
- Do not give the animal too much lead.
- Always turn the animal away from you, not into you. - Never let the animal get ahead of you or behind you.

## TYING UP ANIMALS:

- Always tie a slip knot.
- Ensure the tie is short enough the animal cannot step over or become entangled in it, but not so short to the animal cannot move head.
- Tie to the left of the animals head.
- Neck ropes should be used to prevent escapes. They should be tied on the right side of the animals head. Make sure the loop is not so tight it chokes them or rubs hair off.
- Do not let animals butt you when you are tying them up.
- Do not kneel down when tying, stay as upright as possible.
- If you become pinned in the stall, get someone to move the back end of the animal over before moving.

## CLIPPING/FITTING AN ANIMAL:

- Cattle must be properly restrained. Steel clipping chutes are best for this as aluminum can be too light and tip easily.
- If using a blower on the cattle, let the animal smell and inspect the blower before turning it on.

- Step back from the animal and turn the blower on low speed.
- Gently blow the animals mid section.
- Start the blowing at the hip area and work forward. Do not start at the head.
- Introduce the clippers to the animal by allowing him to sniff them.
- When starting the clippers up hold them in your hand and place your hand up against the neck of the animal to let them feel the vibration.
- When clipping their head, make sure it is properly restrained. - Be careful in the kick zone.

## PIGS



Working with pigs require a great deal of patience.

Pigs do not react in the same way that the other livestock species do. They are predators by nature, not prey.

Pigs are difficult to move, they cannot be chased. They need to be 'guided' in the direction you want them to go, then let them find their way. They may follow a lead pig.

Pigs will squeal for no reason at all, just because they are squealing does not mean they are distressed.

Pigs stress easily and can become fatigued during handling. They must always be handled with care. Never prod or force a pig that

lies down to get up during handling - allow it time to recover.

A pig that is in distress will make loud, deep, gasping sounds. They will stand with their head down or lie down, breathing rapidly, make gasping sounds and refuse to move. Tail biting is also a sign of distress.

When a sow is distressed (ie. following farrowing) she may show signs of excitement such as biting at walls, fences or people. The sows voice is lower and when startled or crowded into a small area, the sow will become aggressive.

Boars and older sows can be particularly dangerous. Boars that have not been de-tusked can be life threatening.

Hogs can bite with enough force to cause serious injury . They also pack enough weight to bowl over people or cause injury by stepping or laying on them. In fact, they can eat you!

Adult pigs may be extremely dangerous. You should use a shield (e.g. piece of plywood or spinal board) when working with them to protect yourself.

Never turn your back on an adult pig - always have them within you line of vision.

Pigs do not like stepping up or down. Ramps should be used when loading pigs.

Pigs do not appear to discriminate between different handlers - they tend to generalize their experiences with all handlers

Pigs do not have the greatest eyesight, but they are able to detect movement at a 310° arc around themselves.

Due to their poor vision, pigs will often try to force their way through small openings. They will target in on small openings of light, especially if it is between the handlers legs.

## RECOMMENDED GROUP SIZES FOR MOVEMENT

Pig Type/Size	Suggested Group Size
Weaned piglets	20
Nursery pigs	20
Finished/Market Pigs	3 - 5
Sows/Gilts	1 - 5
Boars	1 - 5

Hog panels should be utilized at all times. If working in an alley, the panel should be slightly narrower than the alley. Other popular moving aids are plastic shakers and bat wings.

Pigs do not like to back up. They can easily be guided backwards by placing a basket or box over their head as they will try to back out of it.

When moving, processing or examining baby pigs, pick them up by supporting them under the belly or by lifting them by one rear leg above the hock. When setting them down, set them on the front legs first. Piglets should not be tossed or thrown. When being held for an extended period of time, piglets should be held under the rib cage next to the handler's body or by both rear legs using two hands.

For weanling or slightly larger pigs, you can restrain them by placing them directly on their back and holding one or both front legs firmly back along the chest. To ensure effectiveness, you must prevent any struggling. This works well for taking blood samples.

The most common mode of restraint for larger pigs is the hog snare. The snare must be placed at the back of the mouth and then carefully tightened over the upper jaw. Once tightened the pig will pull back. The handler must just hold the snare firmly and the pig will be restrained. Do not drag or pull pigs by the snare.

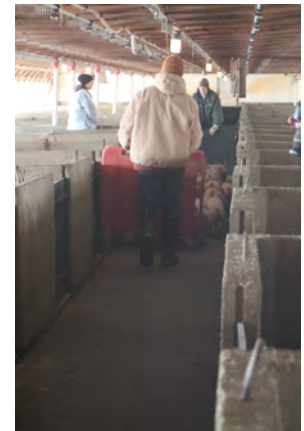
If a hog snare is not available, a simple rope loop may be used. A 1/8" or 1/4" cotton rope can act as a snare using the above technique. Do not use nylon rope or baler twine as this will injure the pig.

Overcrowding or mixing of pigs can cause fighting, injury and ravaging.

Walking the pens daily will allow pigs to be more comfortable around handlers but do not spend too much time with pigs (over-socialize) as this will make them more difficult to handle. They will want to follow instead of being driven.

Per the Code of Practice, enrichments must be provided for pigs.

When weaning sows and introducing them to larger groups, it is best to introduce four or more sows together.





## POULTRY

Even though they seem harmless, birds can cause injury especially to children. Chickens can peck, scratch, puncture and spur handlers.

Poultry are frightened by close contact with people and all attempts must be made not to startle them. Warn birds (i.e. knock on door, turn on light) before entering the barn to avoid startling them.

Handlers must always move smoothly and quietly around poultry.

Chickens are best herded in small groups.

Birds should have no visual contact with other animals that would cause fear in them.

Birds may initially react with hysteria and suddenly fly about, squawk and try to hide. If several birds are loose and one becomes hysterical, the others will usually follow suit.

### VISION IN CHICKEN

- ▶ Chickens are tetrachromatic. They have 4 types of cones that let them see red, blue, and green light, as well as ultraviolet light.
- ▶ Because their eyes are so sensitive, they can see tiny light fluctuations that are imperceptible to humans. Fluorescent lighting to chickens is like strobe lighting to us, so they often become irritable under these lights.
- ▶ Chickens have a third eyelid called the nictating membrane that slides over the eye to protect it from dust and debris.
- ▶ Chickens can use each eye independently on different tasks simultaneously.
- ▶ Chickens have monocular vision. The left eye is far sighted, and right is near sighted chickens have bad night vision.



Chickens have a very rigid social structure referred to as the pecking order. When a group of birds are first introduced there is a period of fighting. When the feathers have cleared, the dominant bird is the one who can peck other birds and not be pecked back.

The bird at the bottom of the pecking order will be dominated and pecked by all other birds. They will be in very bad shape and will need to be watched closely.

Pecking order can be changed by the addition or removal of one bird from the flock. Fighting will occur and for this reason the disruption of a flock should be avoided.

When capturing a chicken the bird's wings must be restrained. With both hands, you will need to hold the wings down to the body of the bird. Once picked up, pick up the wings in one hand and hold them behind the bird. Then you can restrain the legs between the fingers of the other hand.

To restrain a bird with one hand, hold the bird so that it is balanced by resting its weight on your left forearm, its head under your left arm, its legs held between the fingers of your left hand with its tail pointed away from you.

When releasing chickens, it is preferable that they be set on the floor on their feet.



Layers should be inserted through cage doors head first and should be removed feet first, by both legs. They should never be handled by the head, neck or one leg or wing alone.

### CHICKS

- When moved, hatching trays should be kept level and moved smoothly.
- Removal of chicks from hatching trays should not be done by dumping of trays. The chicks can be removed by tilting the box and gently pushing them out. You can also incline the box slightly, then quickly and smoothly withdraw it out from under them in one swift movement. If removing by hand, your hand should form a scope.
- When lifting chicks, their body must be supported at all times and they must never be squeezed.
- If boxes of live chicks are stacked- temperature, ventilation and spacing must be monitored.
- Chicks should not, at anytime, be subjected to excessive noise.
- Chicks can crowd or pile on top of each other when in pens.

### CATCH

- For easier catching and loading, birds should first be corralled with a net or screen.
- Catching birds is best done in low light or blue light.
- The distance traveled with chickens should not exceed 4 - 5 feet.
- No more than 5 birds per hand based on weight.
- Birds should be either lifted with full support of their chest or picked up by one or two legs.
- Birds must not be carried solely by their head, neck, one wing or tail feathers.
- At no time should birds touch the legs of the handler when being carried to crates.
- Birds must be placed in transport containers in an upright position.

## SECTION 3: HEALTH MANAGEMENT

Good health management practices is critical to animal welfare. As a stock person you must be identify sick or injured animals, effectively treat the animal and recognize when an animal needs euthanized.

### IDENTIFICATION OF SICK OR INJURED ANIMALS

One of the keys to successful treatment of sick or injured animals it early detection. Being to “read” animals is an important skill for all stock persons.

Animals should be inspected at a minimum once a day.

SIGNS OF ILLNESS OR INJURY	
Glazed eyes, staring	Reluctance to move
Rapid/irregular, shallow breathing	Standing in rigid position
Shivering	Grinding of teeth
Loss of balance, coordination, staggering	Circling
Little interest in surroundings	Inability or difficulty standing
Grunting	Excessive vocalization
Drooping or cold ears	Coughing
Pressing head against objects	Stays away from other animals
Hunched back	Little interest in food or water
Does not move away when approached	Kicking or biting at abdomen
Continually licking a specific spot	Des not settle, gets up and lies down
When lying down has head turned back	Bloated

All facilities must have an area where animals can be segregated for treatment and monitoring - this is often referred to as the sick or hospital pen. It allow animals easy access to feed and water, protection from the elements and protection from other animals while convalescing.

Once a sick or injured animal has been identified you must decide if the animals requires treatment. Treatment, depending on severity, may include;

- Continue to monitor, possibly segregate from other animal
- Move animal to sick pen and administer treatment
- Euthanize

All facilities should have a health program that includes how long an animal will be given to recover and what animals meet the criteria for euthanasia.

Treatment records should be kept on all animals and include animal ID, start and end date, type of medication, method of administration, injection site, dosage, withdrawal period, person who treated animal and if any broken needles.

## TREATMENT

For the health of the animal and the safety of the handler, it is vital that drugs are administered properly.

### Administration Definitions

#### Intramuscular

Injections given in the muscle of the neck or the butt depending on species.

#### Intravenous

Medicine is injected directly into a vein.

#### Subcutaneous

Injections given under the skin. Best to give in the neck or in the flap of skin behind the front leg.

#### Orally

Administered through the mouth such as a bolus or paste.

#### Ocular

Medicine applied directly to the eye such as eye drops or suave.

#### Intranasal

Administered through the nose.

#### Intramammary

Injected in udder.

#### Intraperitoneal

Injected in the abdomen.

#### Topical

Applied on skin.

Read the label before using any drug or vaccine. All drugs must be used according to label directions.

Dosage is usually determined by the body weight of the animals. If possible, weigh the animal to get the most accurate weight.

Frequency of administration must be followed. Overmedicating or under-medication can be detrimental to the animal's health.

Some drugs are not intended for use in all species. Check with your veterinarian before administering.

Means of administration must be followed - a drug intended for intramuscular use should not be given intravenously.

Always check withdrawal times (how you have to wait to slaughter an animal or sell their milk).

Expiration dates are there for a reason. The drug may be ineffective if expired.

Follow all directions for storage of the drugs. All drugs do not have to be kept in a refrigerator, but they should be kept in a cool place. For those requiring refrigeration, they should be stored at 40 - 45° F.

Never store medication in syringes.

If the jar is amber in colour, it must be kept out of direct sunlight. If the jar is clear glass, they do not have to be kept in the dark.

To make emergencies more efficient and to help ensure consistent dosages are being administered, you may post a chart listing the recommended dosages of each medication.

If you use soap or disinfectant to clean syringes and some residue remains in the syringe, the residue could inactivate modified live virus vaccines.

If using a balling gun or stomach tube the animal should have their head properly restrained.

Needles should always have caps on them when not in use.

Do not use oral medications if caked or clumped.

Separate and store medications from farm chemicals.

Inject only into clean, dry areas. For intranasal injections or oral keep the animal's head tilted upward during and immediately following administration.

When giving injections, the handler should be on the same side of the animal as you are injecting. Gently tap the site three times with the side of your hand before inserting the needle.

Aspirate the syringe after puncturing the skin to ensure that the needle is not in a small vessel.

Intravenous drugs should only be administered by trained handlers.

Common injuries from administration of injections include: punctures, lacerations, swelling, pain, infection, unconsciousness, loss of pregnancy, asthma attacks or cardiac arrest.

Drugs should never be mixed in the same syringe or administered to an animal at the same time.

Outdated or unwanted drugs should not be thrown into the garbage. They should be incinerated if possible or disposed of within your municipalities chemical disposal program. Needles should be disposed in an enclosed container such as a plastic jug.

Place syringe in safe place while waiting for next animal.

Do not save unused parts of bottles of vaccine.

### NEEDLE RECOMMENDATIONS FOR LIVESTOCK

- ▶ Needles are measured by gauge size - the larger the number the smaller the diameter.
- ▶ The thicker the medicine, the smaller the gauge needed. Based upon how easily it will flow through needle.
- ▶ Needle length is determined by age of animal and means of administration.
- ▶ Broken or bent needles should not be straightened and re-used as this increases the chances of the shaft breaking.

<b>Mature Cattle</b>	Intramuscular injections require a 1 1/2" needle. 16 ga. is best as they are a sturdier needle and many of the meds are thick. For thinner meds you can use an 18 ga. Subcutaneous injections are the preferred route for most cattle medications to preserve meat quality. Use a 16 or 18 ga. needle (depending on thickness of medication) x 3/4" or 1".		
<b>Calves</b>	Use 1" needles for intramuscular injections and 18 or 20 ga. For subcutaneous injections, use 3/4" by 18 or 20 ga. 1" needles can be used, but don't go deep into the underlying tissue.		
<b>Pigs</b>	<u>Weight</u>	<u>Gauge</u>	<u>Needle Length</u>
	> 125 kg	16	1 1/2"
	30 to 125 kg	16	1"
	20 kg	16 or 18	1" or 3/4"
	10 kg	18	3/4"
	5 kg	18 or 20	1/2", 5/8" or 3/4"
	Piglet	20	1/2" or 5/8"

Per CPC PigCare

## NEEDLE USE CATTLE

Never give a dairy cow an injection in a milking stall - this will prevent the association of a bad experience with the stall. The milking parlour should be considered safe. If possible the milkers should not give the injection.

Blood samples can be taken from the neck or the tail of cattle. When drawing from the neck, the head needs to be stretched out to the side and vein located. Once the vein is located, place the needle in at an angle so not to push all the way through. You should see blood immediately. Once the blood is flowing, attach the vial to the needle.

When drawing from the tail. Lift the tail straight up, locate vein, insert needle at an angle and attach vial once blood is present.

## NEEDLE USE PIGS

Pigs can be restrained for vaccinations or blood withdrawal in stalls, crowded with pig board or with a snare.

Subcutaneous and Intramuscular injections should be given in the neck, directly behind the ear - just where the neck starts to bulge. Intramuscular injections should not be made in the back leg or ham area.

Subcutaneous injections can also be made in the fold of the flank or along the side of the chest.

There are several options for withdrawing blood from pigs:

- **Ear Vein** - Most adult pigs have very prominent ear veins. The vessels can be occluded by grasping the base of the ear tightly or by using a rubber band or tubing around the base. A small gauge needle (20 ga.) is best to use. Use extreme caution as the vein walls are very thin.
- **Jugular Vein**- The external jugular vein cannot be palpated or visualized. It is located in the lower half of the neck in the deepest part of the jugular furrow. The needle is directed in at an angle perpendicular to the skin surface.

When bleeding pigs be sure to keep your head away from the pig's head.

## NEEDLE USE IN CHICKENS

- ▶ Intravenous injections are generally administered at the alar vein located at the elbow underneath the wing.
- ▶ Intramuscular injections are mainly performed on the breast muscle that is on the side of the prominent ridge of the sternum or keel bone.
- ▶ Subcutaneous injections are most often performed in the loose skin covering the keel bone.
- ▶ Blood can be collected by using a small 21 - 25 gauge needle. You will need to use a tube to collect the blood as aspirating with a syringe will collapse the vein.
- ▶ The Medial Metatarsal Vein is the best choice for blood collection. It is found in the lower medial side of the lower leg.





## OTHER TREATMENT PROCEDURES AND PROCESSES

Ensure that the animal is properly restrained before dehorning, castrating, vaccinating, teeth or tail trimming or administering any medications.

Keep all processing tools clean and maintained and disinfect them between each animal.

### CATTLE

#### TUBING A CALF

- When tubing a calf, your biggest concern is that the tube is placed in the correct pipe.
- You do not want to tube down the trachea, you want it down the esophagus.
- Hold the calfs head back to straighten the path and start slowly feeding the tube downward.
- Encourage swallowing by rubbing on the calfs neck.
- If you hear air coming up the tube, it is in the wrong side.
- Slowly feed liquid down.
- When finished slowly and carefully remove tube.

#### DISBUDDING AND DEHORNING

- Disbudding is the removal of the horned before it becomes attached to the skull. This occurs at approximately 2 - 3 months of age. Horn buds can be removed with a knife, cauterized with an electric or propane iron or with chemical paste. Per the Code of Practice, calves should be disbudded as early as possible while horns are still at bud stage.
- Dehorning is a procedure that occurs after the buds have attached to the skull. Horns are removed by cutting or sawing the horns close to the skull. Per the Code of Practice, pain control is required when dehorning calves.

#### CASTRATION

- Castration is performed using either the surgical method (knife) or non-surgical methods (burdizzo, elastrators/banding).
- Ideally, calves are castrated in their first week of life.
- Per the Code of Practice, pain control must be used when castrating bulls over 6 months of age.

### PIGS (Per PigCare)

#### CASTRATION

- Castration and tail docking procedures are only carried out by trained stockpersons.
- Hygiene: Keep processing instruments
- clean to prevent infections
- Equipment: Replace or repair dull equipment when identified.
- An analgesic must be given at castration (to pigs of any age) for control of post-castration pain.
- For castration performed past 10 days of age, an anesthetic must also be used prior to castration.
- Pick up and hold male piglet upside down with back legs held together, ensuring its scrotum is fully exposed and you are pushing the testicles upwards towards the scrotum with your finger(s).

- Use a clean, sharp scalpel to make a 1-cm incision on one side of the scrotum,
- exposing the testicle. Either pull the testicle upwards towards the tail in a quick, straight motion to break the spermatic cord, or pull the testicle out 3-4 inches and slice through the spermatic cord with the scalpel. Repeat for the other testicle.
- Place scalpel into container of disinfectant between piglets.
- Repeat the process for all male piglets in the litter.
- Use a new scalpel blade for every litter.

#### TAIL DOCKING

- An analgesic must be given to all pigs at any age when tail docking. Tail docking should be performed within a few days of birth.
- Use a clean, sharp set of clippers (or a cauterizer) to cut the tail of the piglet about 1/3 of the way up the tail from its base (aiming to cut between vertebrae).
- Be careful: docking tails too short may lead to infections or prolapses.

## SECTION 4: EUTHANASIA

Euthanasia is derived from the Greek for “good death” and is accomplished when death results in a minimum of pain, fear and distress to the animal.

Stock persons who are responsible for the care of livestock have a moral obligation to ensure the welfare of the animals in their care. Part of this obligation is to make certain animals do not experience unnecessary pain and suffering, even in death. Therefore, when disease or injury conditions arise that diminish the quality of life or create pain and suffering - that cannot be effectively or economically relieved - euthanasia is indicated.

Humane death is achieved by utilizing techniques that induce an immediate loss of consciousness followed by, or in conjunction with, cardiac and respiratory arrest that ultimately results in loss of brain function. For persons performing euthanasia, a certain degree of technical proficiency, knowledge and appropriate equipment are required.

Individuals are morally, ethically and legally responsible for the welfare of the animals in their care. Although the financial implications are part of the decision process. An animal's welfare must never be compromised for financial reasons.

### INDICATIONS

Indications for euthanasia of livestock include poor health, disease, injury, loss of productivity, economics and safety.

There are three possible treatment options for stock persons when faced with each of these situations:

1. Ship the animal for meat processing, IF the animal is fit for transport and human consumption;
2. Treat the animal;
3. Euthanasia.

Just because there is a chance for recovery, it does not mean treatment is always the optimal choice for the producer or the animal. When deciding which option is best, there are several questions a handler has to ask in order to make a responsible decision.

- Is the animal experiencing a high level of pain?
- Will it require continual medication to alleviate the pain and suffering.
- Will the animal have to endure a painful and lengthy recovery?
- Will the animal be likely to return to normal function post recovery?
- Can the required care be provided during the convalescent period?
- Is the animal likely to suffer chronic pain or immobility following recovery?
- Will weather extremes create inhumane conditions for this animal during and/or after recovery?
- Will the animal be unable to or have difficulty accessing feed and water.
- Will the cost of therapy outweigh financial return?
- Is the animal contagious and can spread disease or illness to other animals, adversely affecting the welfare and the economics of the facility.

The answer to these questions is not always clear. Nonetheless, they should be part of the decision-making process whenever faced with the choice of treatment, slaughter or euthanasia.

One of the biggest challenges though is determining: *How long should an animal be given to recover?* Current industry literature and guidelines would suggest that animals should show evidence of significant improvement within 24 hours from the onset of treatment.

Simply leaving an animal that is suffering to die of natural causes or in other words, “letting nature take its course” is unacceptable. Furthermore, it is NOT acceptable to prolong an animal’s misery by delaying euthanasia for reasons of convenience. It is important that when euthanasia is indicated, it be conducted in timely manner.

The following is a list of the more common illnesses and diseases that producers encounter while raising animals. This reference list is not intended to be all inclusive. It provides common examples of poor health and disease that may require euthanasia.

<b>INDICATIONS FOR EUTHANASIA</b>	
Too weak to ship due to emaciation and poor body condition	Infected prolapse
Unresponsive to treatment and lack of ongoing desire to eat	Intractable diarrhea
Disease for which no effective treatment is known or is cost prohibitive	Paralysis from traumatic injuries or disease that results in immobility
Disease for which expected recovery is unusually prolonged	Transmittable diseases (Zoonotics)
Drastic weight loss	Fractures of the legs, hip or spine
Contagious or reportable disease	A wound significantly impacting a critical biological function (i.e. major organ, muscle and skeletal systems, brain injury)
Unresolved prolapses	Profuse bleeding
Unresponsive respiratory disease/illness	Emergency medical conditions that result in excruciating pain that cannot be relieved by treatment (i.e. trauma associated with highway accidents)
Advanced or infectious arthritis affecting more than two joints	

## **LOSS OF PRODUCTIVITY**

Most livestock are raised for production purposes. When the costs of treatment exceed productivity income of an individual animal, the producer may decide to remove the animal from the production cycle. Producers should cull the animal in a timely manner while the animal is still fit for transport and processing as this may allow for the owner to recover some of the animal's value.

In cases where animals are unfit for transport or not acceptable to be processed for meat, it is the responsibility of the producer to euthanize the animals on farm. Removing these animals from the production cycle in a timely manner may increase profitability of the farm and improve the overall welfare and health status of the herd or flock.

## **DANGEROUS ANIMAL**

If an animal is too dangerous or is a threat to people (i.e loose and frenzied, attacks people regularly), it may need euthanized.

## **ECONOMICS**

Animal welfare must never be compromised for financial reasons. Economics may be factored into the decision to euthanize; however, it is often very difficult for producers to decide when an animal becomes uneconomical.

**Economic factors include:**

- The cost of treating the animal
- The loss in productivity during the illness or injury
- Impact to the potential infection of other animals
- The cost to return the animal to profitable productivity.

## **HEALTH EMERGENCY**

The Canadian Food Inspection Agency (CFIA) is responsible, under the Health of Animals Act, for eradication of foreign animal disease (FAD) in Canada. An outbreak of a foreign animal disease or a reportable disease as identified by the Office of the Chief Provincial Veterinarian and requires immediate action to contain, control and eradicate the disease. These actions may include: animal movement controls, euthanasia, disposal, cleaning and disinfecting of infected premises and transport.

There may be instances where the producer is required to assist in health emergencies under the direction of governmental authorities.

## ACCEPTABLE METHODS OF EUTHANASIA PER THE CODES OF PRACTICE

Table 6.1 – Acceptable Euthanasia Methods for Cattle (adapted from 19,50,51)

Method	Suitable for	Procedure and Equipment
Gunshot	Calves (under 181kg [400lbs])	Requires a minimum of 407 joules (300ft-lb) muzzle energy (52). Examples of appropriate firearms include: centrefire high powered rifle or shotgun (20 gauge or greater, from no more than 10m [32ft]) (see Figure 6.2). Note: A standard .22 calibre long rifle only produces 119-138 joules (116-135 ft-lb) of muzzle energy and is not sufficient to humanely kill cattle.
	Yearlings, Cows and Mature Bulls	Requires a minimum of 1356 joules (1000ft-lb) muzzle energy (52). Examples of appropriate firearms include: centrefire high powered rifle or shotgun (20 gauge or greater, from no more than 10m [32ft]) (see Figure 6.2). Note: A standard .22 calibre long rifle only produces 135 joules (100ft-lb) of muzzle energy and is not sufficient to humanely kill cattle.
Penetrating Captive Bolt Device + Secondary Kill Step	All weight and age classes	Choose appropriate calibre, charge, and bolt length for animal size. Restraint if needed. A secondary method (bleeding out or pithing) may be required if the penetrating bolt device is designed only to stun the animal (see Appendix F).
Non-penetrating Captive Bolt Device + Bleeding Out	Young calves only	Restraint if needed. Bleeding out step required (see Appendix F).
Approved Euthanasia Drugs	All cattle	Must be administered by a veterinarian. Restraint if needed. Safe disposal of carcass when barbiturates are used.

Weight of Pig →	Euthanasia Method ↓						
	< 2.3kg ( < 5lbs)	2.3kg to 9kg (5lbs to 19.8lbs)	9kg to 32kg (19.8lbs to 70lbs)	32kg to 68kg (70lbs to 150lbs)	68kg to 120kg (150lbs to 264lbs)	120kg to 200kg (264lbs to 440lbs)	> 200kg ( > 440lbs)
Anesthetic Overdose <sup>2</sup>	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Blunt Trauma	Conditional <sup>3</sup>	Conditional <sup>3</sup>	Unacceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Electrocution	Unacceptable	Conditional <sup>4</sup>	Conditional <sup>4</sup>	Conditional <sup>4</sup>	Unacceptable	Unacceptable	Unacceptable
CO <sub>2</sub> and/ or Argon Inhalation	Conditional <sup>5</sup>	Conditional <sup>5</sup>	Conditional <sup>5</sup>	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Non- Penetrating Captive Bolt	Acceptable <sup>6</sup>	Acceptable <sup>6</sup>	Unacceptable	Unacceptable	Unacceptable	Unacceptable	Unacceptable
Penetrating Captive Bolt <sup>7</sup>	Unacceptable	Unacceptable	Acceptable	Acceptable	Acceptable	Conditional <sup>8</sup>	Conditional <sup>8</sup>
Gunshot to the Head <sup>9</sup>	Unacceptable	Unacceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable



Euthanasia Method	Acceptability by Bird Type	Conditions	Comments
<b>On-Farm</b>			
<b>Anesthetic Overdose</b>	Acceptable All Birds	<ul style="list-style-type: none"> <li>Administered under the direction of a licensed veterinarian only</li> </ul>	<ul style="list-style-type: none"> <li>Carcasses may be dangerous to scavengers and should not be submitted for normal rendering</li> </ul>
<b>Non-Penetrating Captive Bolt</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Correct placement of the device on the head is critical</li> <li>Humane restraint methods (e.g. 2 people, appropriate restraint device) may be necessary</li> </ul>	<ul style="list-style-type: none"> <li>May be more appropriate for large birds</li> </ul>
<b>Penetrating Captive Bolt</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Humane restraint methods (e.g. 2 people, appropriate restraint device) are necessary</li> <li>The impact must be of sufficient force and accurately placed in order to result in immediate insensibility and death in a single blow</li> </ul>	<ul style="list-style-type: none"> <li>Alternative methods should be considered (e.g. non-penetrating captive bolt) due to the potential for incorrect application</li> </ul>
<b>Manual Blunt Force Trauma</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Instrument must be sharp and of appropriate size</li> <li>Procedure must be carried out in one quick motion and result in a complete severance of the head</li> <li>Requires secure restraint of the bird</li> </ul>	<ul style="list-style-type: none"> <li>Need for environmental sanitation (blood)</li> <li>Risk of disease transmission via blood</li> </ul>
<b>Decapitation</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Requires specially-designed closed chamber to contain gas and ensure that oxygen levels remain below 5%</li> <li>Use pure nitrogen; do not use in mixtures with other gases</li> </ul>	<ul style="list-style-type: none"> <li>Not commonly used on-farm</li> <li>May reduce respiratory distress during loss of sensibility compared to other gases</li> <li>Birds may become sensible if gas concentration is not sufficiently high and if oxygen levels are not low enough. This may be difficult to achieve in an on-farm setting</li> <li>Birds may experience convulsions before becoming insensible</li> </ul>
<b>Gas Inhalation: Nitrogen (N)</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Requires specialized equipment (pressure-reducing regulator, CO<sub>2</sub> cylinder or tank) and a closed chamber to contain gas</li> <li>Gas must be supplied in a precisely regulated and purified form without contaminants or adulterants (33)</li> </ul>	<ul style="list-style-type: none"> <li>May cause brief periods of distress before birds become insensible</li> <li>Birds should be placed in the chamber in a single layer</li> <li>Use in a well-ventilated area for operator safety</li> </ul>
<b>Gas Inhalation: Carbon Dioxide (CO<sub>2</sub>)</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Requires specially-designed closed chamber to contain gas, along with a regulator and flow meter</li> </ul>	<ul style="list-style-type: none"> <li>Dangerous to operators and potentially explosive at high concentrations; therefore, producers are encouraged to find an alternative to CO gasping</li> <li>Use in a well-ventilated area for operator safety</li> </ul>
<b>Gas Inhalation: Carbon Monoxide (CO)</b>	Acceptable with Conditions: All Birds		
<b>Cervical Dislocation<sup>2</sup></b>			
<b>i) Manual</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Crushing of the neck bones is unacceptable prior to loss of sensibility</li> <li>This method is restricted to smaller birds (e.g. ≤ 3 kg), although this may vary depending on operator ability</li> </ul>	<ul style="list-style-type: none"> <li>Performed correctly, cervical dislocation results in the luxation (dislocation) – never crushing – of the cervical vertebrae</li> <li>Alternative methods should be considered (e.g. non-penetrating captive bolt) as in some classes of poultry there is evidence that cervical dislocation may not cause rapid loss of sensibility</li> </ul>
<b>ii) Mechanical</b>	Acceptable with Conditions: All Birds	<ul style="list-style-type: none"> <li>Crushing of the neck bones is unacceptable prior to loss of sensibility</li> <li>Device must be purpose-designed and appropriate for the size of bird</li> </ul>	<ul style="list-style-type: none"> <li>The site of the dislocation should be as close to the head as possible</li> <li>Cervical dislocation is difficult to perform correctly in large birds, and therefore may not result in immediate loss of sensibility. It is recommended that larger birds be rendered insensible prior to applying cervical dislocation</li> </ul>
<b>Maceration</b>	Acceptable with Conditions: Chicks and Poults < 72 hours	<ul style="list-style-type: none"> <li>Must use properly maintained, proven effective, purpose-designed equipment that results in instantaneous and complete maceration</li> </ul>	<ul style="list-style-type: none"> <li>The number of birds/eggs entering the equipment at one time can influence the effectiveness of the equipment (8)</li> </ul>

<sup>2</sup>Dislocation of the head and neck to disrupt nervous tissue and blood vessels

## PREPARING FOR EUTHANASIA

Proper preparation for euthanasia will help ensure that the process is as effective, safe and stress free as possible for both the handler and the animal.

Being properly prepared includes:

- training
- the appropriate equipment
- means for restraint when necessary
- low stress handling of the animal
- implementing safety procedures for both people and animals in the immediate area.

Animals should be handled as little as possible and appropriately restrained. Unfit animals should not be moved for euthanasia except in cases of human safety or the safety of other animals. If an animal must be moved, a humane method of movement, such as a sled, must be used.

### Restraint

If restraint of a animal is necessary, it must meet the following criteria:

- Appropriate for the animal.
- Minimize distress and pain prior to euthanasia. Appropriate for the method of euthanasia chosen. Occur for the shortest time possible.
- Be safe for handlers (animal cannot strike out).

Proper restraint depends on the size and condition of the animal. Possible restraints include hand (piglets), hog boards, chutes or halters.

## APPLICATION OF EUTHANASIA METHODS

The three different modes by which death will occur is: direct depression of the central nervous system (eg. lethal injection), hypoxia (eg. gas) or physical disruption of the brain (eg. gunshot).

Death is a process and does not occur immediately, but when euthanasia is properly applied, animals should not experience any pain. They will first experience rapid loss of consciousness, followed by cardiac or respiratory arrest and subsequent loss of brain function eventually resulting in death.

### GUNSHOT

Gunshot euthanizes through mass destruction of the brain. The degree of brain damage inflicted by the bullet is dependent on the characteristics of the firearm, the nature of the bullet and the accuracy of the shot. For this reason, it is imperative to use a sufficiently powerful firearm. The correct selection of firearms and ammunition is vital to effectively euthanizing animals.

Gunshot must be performed only by trained, skilled and licensed handlers using a registered firearm.

- The shooter should wear both protective ear and eye gear.
- All firearms must be maintained and kept clean and ammunition kept dry.
- The shooter must always ensure a clear background when shooting and, if possible, have a backstop such as a manure pile that will stop the bullet if it passes through the animal.
- Firearms must never be held flush to the animal's head or body. This may cause the gun to explode.

***Safety of handlers, public and other animals is critical. Other people and animals must be behind the shooter and out of the line of fire. Ricochet can occur off the skull, off the pavement or other solid objects due to missed shots.***

Accuracy of the shot is vital to the effectiveness of gunshot. The animal's head must be stationary. One shot should be enough; however, a second shot or a secondary action such as pithing or exsanguination may be necessary.

Gunshot to the heart or neck is not an acceptable means of euthanasia.

#### For euthanasia purposes in Canada:

- For animals 400 lbs or less, a firearm with 300 - 1,000 ft lbs of muzzle energy should be used. For animals over 400 lbs, a firearm with 1,000 ft lbs or more of muzzle energy should be used. Muzzle energy can be found on ammunition boxes or online.
- Shotguns are very effective for euthanasia of livestock. Shotguns are appropriate for a distance of 1-2 m (1-2 yd.). The 20, 16 and 12 gauge, with slugs, can be used on all weight and species classes.
- The most common rifles found on farms are .22 calibre long rifles; however, these do not meet the recommended minimum of 300 ft. lb. (407 J) of muzzle energy as on average they only supply 100 ft. lb. (136 J) of muzzle energy. Therefore .22's must only be used for young, lighter weight animals from a distance of 5-25 cm (2-10 in.). A long rifle, round nose, lead bullet should always be used with a .22.

## CAPTIVE BOLT GUNS

The penetrating captive bolt consists of a steel bolt, with a flange and piston at one end, which is housed in a barrel. When fired, the expansion of gases propels the piston forwards and forces the bolt out of the muzzle of the barrel. The bolt is retained within the barrel by a series of cushions that absorb the excess energy of the bolt and keep it within the barrel. The bolt is then retracted back into the gun either automatically or manually depending upon the design of the gun. These guns are powered by either gunpowder in a cartridge or compressed air.



The two main factors affecting the effectiveness of the captive bolt gun is bolt velocity and accurate placement. To be effective, the bolt must have sufficient bolt velocity for the weight class and animal type it is being used on. Bolt velocity is dependent on grain strength (or PSI), maintenance, repair and storage. The gun must be accurately placed on the animals head - this includes location of shot and flushness of the gun to the skull.

There are a variety of penetrating captive bolt guns with the most common being 9 mm, .22 calibre and .25 calibre. Cartridge powered styles are available as in-line (cylindrical) and pistol grip (resembles a handgun). There are pneumatic penetrating bolt guns, but these are normally found in slaughter plants, not on farm.

Non-penetrating captive bolt guns for on-farm euthanasia are available as cartridge powered or pneumatic. These are currently classified as controlled blunt force trauma. Cartridge powered non-penetrating guns are available in the same style as penetrating, in-line or pistol grip. The commercial non-penetrating guns currently on the market are only approved on piglets up to 15 kg (20 lbs) .

Currently available pneumatic captive bolt guns (air powered) marketed to farms, resemble air powered nail guns. Manufacturers recommendations for PSI, weight class restriction and number of times the gun is applied must be adhered to. Manufacturers will include the required PSI with the devices.

Manufacturers have recently developed captive bolt euthanasia systems that utilize the body of a single device with interchangeable muzzle assemblies. They include a variety of penetrating and non-penetrating bolt configurations that are paired with specific cartridges based on the species and size of the animal. This system significantly reduces the cost of the unit and maintenance requirement for multi- species farms and breeding facilities.

Cartridges vary in strength and are classified by the amount of propellant they contain. This is measured in grains. The higher the amount of grains, the larger the animal for which they are intended. Manufacturers should include a guide which matches cartridges to weight class and bolt heads when required.

## APPLICATION

It is highly recommended that captive bolt guns designed for on-farm euthanasia be used. These devices are designed to cause sufficient destruction of the brain through physical and concussive damage to be considered a one step method. Other devices may only stun the animal and therefore require a secondary kill step such as exsanguination or pithing.

Only trained handlers should use this method and must be familiar with the gun's features and directions for use.

### CAPTIVE BOLT GUN DISPATCH

- The shooter should wear both protective ear and eye gear.
- The gun must not be cocked until the shooter is ready to fire.
- The safety must be set until the handler is ready to discharge it.
- The discharge end of the captive bolt must be pointed towards the ground at all times.
- Animals may need to be restrained as the animal's head must be stationary before shooting. Animals that are upright and mobile may be more difficult to safely captive bolt without restraint.
- For the application of the captive bolt gun, the ideal point of entry is the highest point/top of the head. The animal can be approached from head on or from behind and off to the side, out of the line of sight of the animal.
- The recoil will vary depending on calibre, buffer configuration, manufacturer, cartridge used and animal size. If necessary, the handler should use two hands when firing the gun.



One shot should be enough; however, a second shot or a secondary action such as pithing or exsanguination may be necessary.

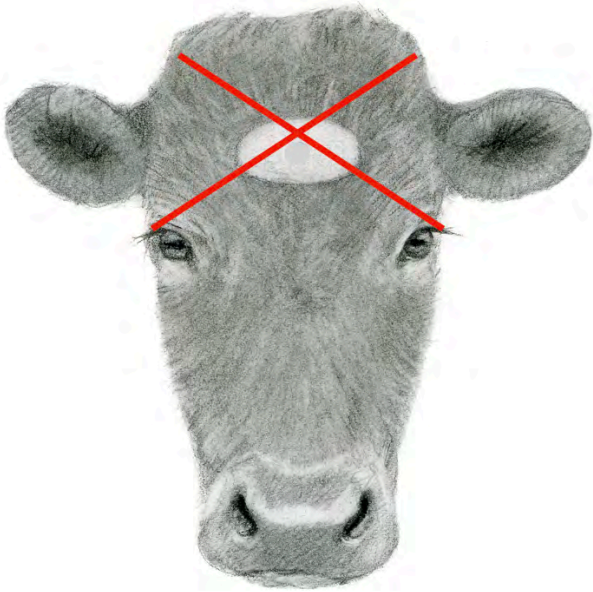
If a second shot is required, it must not be administered in the same place as the first shot. If the first shot was correctly placed, the second shot should be applied slightly above and to the side of the first hole. If the first shot was incorrectly placed, the second shot should be placed in the correct spot.

Captive bolt guns must be cleaned and maintained in order to operate effectively - poor maintenance is the leading cause of failed kill. Guns should be cleaned and inspected following each day of use. Guns that are not used regularly still need to be cleaned and oiled at least once a month according to the manufacturer's instruction manual for cleaning.

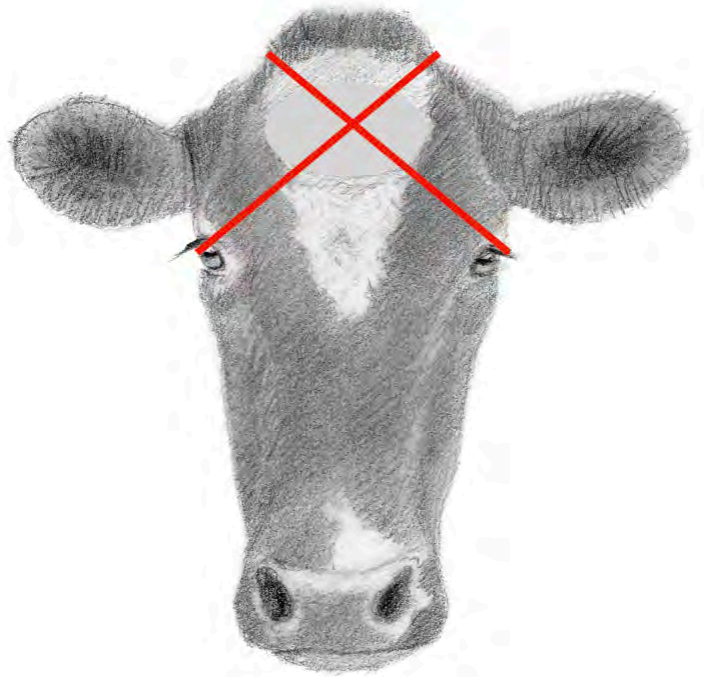
Captive bolt guns and cartridges must be stored in a dry area. Exposure to humidity will affect both the gun and the effectiveness of the ammunition.



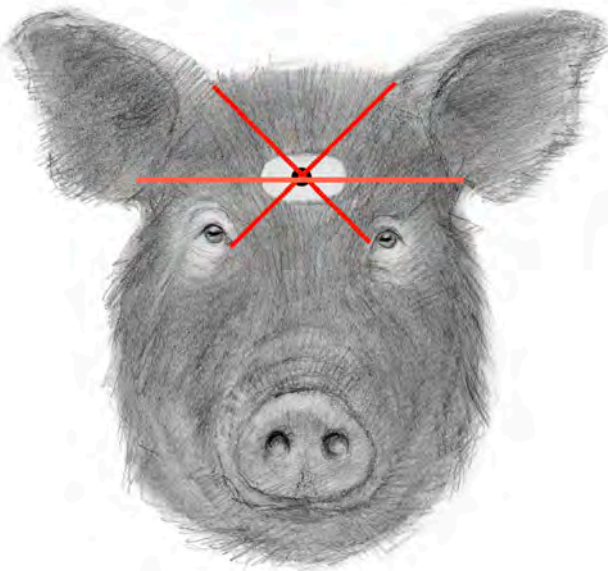
**SHOT PLACEMENT**



**BEEF**



**DAIRY**



**HOGS**

## SECONDARY METHODS

### PITHING

Pithing is a procedure that is used to ensure the death of an animal following gunshot or penetrating captive bolt gun. A pithing rod can be made from a variety of materials or purchased. The rod itself must be somewhat rigid, yet still flexible and must be long enough to reach through the brain to the spinal column.

Following gunshot or application of the penetrating captive bolt gun, the pithing rod is inserted into the hole created by the bullet, or the bolt, and pushed through the brain to the spinal cord. The rod is then moved back and forth and around inside the head. In order for pithing to effectively kill, the original bullet or rod must have been accurately delivered into the brain. If this is not the case, a second accurately placed shot must be applied.

### EXSANGUINATION

Exsanguination is the process of bleeding out an animal which is achieved by severing a major artery or vein. Exsanguination is not recognized as a sole method of euthanasia, the animal must be stunned prior to bleeding. Great care must be practiced while performing exsanguination. Although the animal is unconscious, it is still capable of making violent involuntary muscle contractions that can cause injury to the handler. This procedure can be very disturbing to observers due to the large volume of blood loss and can raise concerns with biosecurity.

Exsanguination should be performed using a pointed, very sharp knife with a rigid blade at least 15.2 cm in length. The knife should be fully inserted through the skin just behind the point of the jaw and below the neck bones. From this position the knife is drawn forward severing the jugular vein, carotid artery and windpipe. Properly performed, blood should flow freely with death occurring over a period of several minutes



## CONFIRMATION OF INSENSIBILITY AND DEATH

If the animal is found not to be insensible or is showing any signs of returning to sensibility, the method must be immediately applied again or a secondary method utilized.

As stated earlier, death is not immediate but a process that can take in excess of 10 minutes to be completed. First the animal is rendered insensible, then the body begins to die as the brain stops, the lungs stop breathing, the heart quits beating, and the blood quits circulating.

Upon loss of consciousness, reflex motor activity or muscle spasms are likely to occur. This is a normal part of the death process and should not be perceived as the animal being in pain or distress. People sometimes mistake this involuntary movement as sensibility or mistake the lack of movement as loss of consciousness.

The muscle spasms will not be immediate and may take up to a minute to begin. Pigs and sheep tend to have more violent and longer involuntary muscle spasms than cattle. The violent kicking can last 15–20 seconds or longer with more random, mild convulsions lasting for several minutes. If the animal has an extended period of movement or 'flopping' it may only be stunned and should be reshot.

### ONSET OF DEATH/INSENSIBILITY

Immediately following application of euthanasia method, confirmation that the animal has been effectively rendered insensible must occur. For humane death, the animal must be rendered insensible on first shot and go on to die without regaining consciousness. Confirmation of insensibility must be confirmed immediately following application of the killing method.

The primary indicators for onset of death/insensibility include:

- Lack of natural blinking/eye movement
- Pupils dilated
- Lack of rhythmic breathing
- Loss of deliberate movement (righting themselves, trying to stand up, lifting head up off the ground).
- No vocalization after application
- Presence of corneal reflex (blinking occurs when you tap the corner of the eye) is an indicator that the animal may be returning to sensibility but is not fully sensible.
- Loss, flacid neck poultry



If the animal is found not to be insensible or is showing any signs of returning to sensibility, the method must be immediately applied again or a secondary method utilized.

## CONFIRMATION OF DEATH

Confirmation of death can be challenging, especially in a barn or farm environment.

**NO ANIMAL CAN BE MOVED OR DISPOSED OF UNTIL DEATH HAS BEEN CONFIRMED.**

At least three of the signs of death listed below must be confirmed to verify an animal is dead. It is false to assume an animal is dead because it is not moving.

- Absence of rhythmic breathing
- Lack of palprebral and corneal reflex
- No blinking
- Dilation of pupils
- Absence of rhythmic heartbeat (the heartbeat may continue for a extensive period of time even with the absence of all other signs of insensibility. As long as the animal does not exhibit any of the signs presented in the following list, the welfare of the animal is not in jeopardy).



## SIGNS AN ANIMAL IS STILL ALIVE

- Attempts to right itself
- Vocalizes after application
- Controlled eye movement or natural blinking
- Rhythmic breathing
- Extended period of aggressive movement or “flopping”. There may continue to be the occasional involuntary spasm following this time period but not to the degree as the initial onset.
- Constricted pupils

## SECTION 5: LIVESTOCK TRANSPORTATION

In Canada, the transport of livestock is regulated under the Health of Animals Act Part XII. Everyone involved in the transport of livestock must be aware of the requirements under Part XII.

### HEALTH OF ANIMALS ACT PART XII INCLUDES:

- Training requirements for all those involved in the transportation of animals.
- Requirement for contingency plan
- Assessment of risk factors related to transport and monitoring
- Transport of unfit and compromised animals
- Transport of young/neo-nate animals
- Transport of lactating animals
- Acceptable and unacceptable handling practices including the use of electric prods
- Required environmental protection and ventilation and exposure to toxic or noxious things
- Space requirements and over
- Requirement of segregation of incompatible animals
- Design and condition of trailers
- Time animals can be off feed, water and rest
- Transfer of Care
- Record Keeping

Full regulations can be found by searching Health of Animals Act Part XII

## TRANSPORTATION TIPS

Every person who loads, confines or transports an animal in or unloads an animal from a conveyance or container shall have the necessary knowledge and skills to conduct those activities in compliance with Health of Animals Act Part XII.

Loading and unloading are the most stressful parts of transportation.

Transportation impacts both animal welfare and meat quality.

Handle animals using low stress methods at all times during sorting, loading and unloading.

Ensure the animal is fit to be transported and segregate if needed.

Determine loading density before sorting and loading. Factors that affect density: species being loaded, weather, size and physical condition of animals.

Sort the animals before entering loading area. It is best to ship pre-socialized animals together.

Give the animals adequate time to load and unload, including time to walk up or down the ramp.

If they are showing signs of stress or fatigue, allow them time to rest.

Back slowly to the chute and align properly with no gaps between the chute and the vehicle. Adjust if necessary.

After loading, slowly pull away from the chute and allow the animals to become accustomed to the movement. Perform all stops and starts with great care. Drive like you have animals in the back!

Take time to check on animals during transport to make sure no animals are down in the trailer or in distress.

Monitor temperatures and adjust environmental management as required for current conditions.

<b>Transport During Weather Extremes</b>	
<b>Hot Weather</b>	<b>Cold Weather</b>
Early morning loading will help to keep animals cool and more comfortable.	Provide environmental protection as required for each species (i.e winter boards, bedding)
Handle with extra care to reduce the chance of heat stress.	Reduce loading density to allow animals to get away from the sides of trailer and stay dry.
Wet shavings or sand in the bottom of the trailer can help reduce heat stress.	Wet animals are at highest risk of cold stress.
Load trailers/modules at a lighter density.	Be aware of road conditions and closures.
Keep the trailer moving at all times. If you have to stop, make sure the stop is as short as possible.	If you stop for a break, make sure it is as short as possible. Protect animals from wind and freezing rains.
In extreme heat, do not transport.	

## FITNESS TO TRANSPORT (PER HEALTH OF ANIMALS ACT PART XII)

Unfit	Compromised
Non-ambulatory	Bloated but has no signs of discomfort or weakness
A fracture that impedes its mobility or shows signs of pain or suffering	Acute frostbite
Lame in one or more limbs to the extent that it exhibits signs of pain, halted movements or a reluctance to walk	Blind in both eyes
Lame to the extent that it cannot walk on all of its legs	Not fully healed after a procedure (i.e dehorning,castration)
In shock or is dying	Lame other than in a way that is described in unfit
A prolapsed uterus, a severe rectal or vaginal prolapse	A deformity/fully healed amputation
Exhibits signs of a generalized nervous system disorder	In a period of peak lactation
A porcine that is trembling, has difficulty breathing and has discoloured skin	An unhealed or acutely injured penis
Laboured breathing	A minor rectal or minor vaginal prolapse
A severe open wound or a severe laceration	Mobility limited by a device other than hobbles that are applied to aid in treatment
An injury and is hobbled to aid in treatment	A wet bird
Extremely thin	Exhibits any other signs that indicates that it has a reduced capacity to withstand transport.
Signs of dehydration	
Signs of hypothermia or hyperthermia	
Signs of a fever	
Hernia that impedes its movement, including when a hind limb of the animal touches the hernia as the animal is walking, causes the animal to exhibit signs of pain or suffering, or touches the ground when the animal is standing in its natural position, or open wound, ulceration or obvious infection;	
In last 10% of its gestation period or has given birth 48 hours	
Unhealed or infected navel	
Gangrenous udder	
Severe squamous cell carcinoma of the eye	
Bloated and exhibits signs of discomfort or weakness	
Signs of exhaustion	
Exhibits any other signs of infirmity, illness, injury or of a condition that it cannot be transported without suffering.	

## Per Health of Animals Act Part XII Section 139 and 140

An **unfit animal** may be loaded and confined in a conveyance or container and be directly transported to and unloaded at a place, other than a slaughter establishment or assembly centre, where it can receive veterinary care if it is individually loaded and unloaded without having to negotiate any ramps inside the conveyance; it is isolated during confinement and transport; measures are taken to prevent the animal's unnecessary suffering, injury or death during loading, confinement, transport and unloading; and a veterinarian recommends that the animal be transported to receive veterinary care.

An animal that becomes unfit during confinement or transport in a container shall take reasonable measures as soon as possible to prevent the animal's unnecessary suffering, injury or death and, as soon as possible, transport the animal directly to the nearest place where it can receive care or be humanely killed; or if the animal is not transported to the nearest place, humanely kill the animal in the conveyance.

No person shall unload an unfit animal, or cause an unfit animal to be unloaded, from a conveyance or container for the purpose of humanely killing the animal unless in the case of an unfit animal that is non-ambulatory, the animal is rendered unconscious before it is unloaded, or the animal is humanely killed before it is unloaded; and in the case of an unfit animal that is ambulatory, the animal is unloaded individually in a manner that is not likely to cause unnecessary suffering, injury or death, the animal is rendered unconscious before it is unloaded, or the animal is humanely killed before it is unloaded.

No person shall load, confine or transport a **compromised animal** in or unload a compromised animal from a conveyance or container, or cause one to be so loaded, confined, transported or unloaded, unless it is familiar and is unlikely to cause either animal suffering, injury or death and if they are segregated from other animals; it is individually loaded (and unloaded without having to negotiate any ramps inside the conveyance; measures are taken that are necessary to prevent the animal's suffering, injury or death during loading, confinement, transport and unloading; and it is transported directly to the nearest place, other than an assembly centre, where it can receive care or be humanely killed.

Every person who confines or transports an animal that becomes compromised during confinement or transport in a container or conveyance, other than a vessel, shall take reasonable measures as soon as possible to prevent the animal's unnecessary suffering, injury or death and, as soon as possible, transport the animal directly to the nearest place where it can receive care or be humanely killed; or if the animal is not transported to the nearest place, humanely kill the animal in the conveyance.

## SECTION 6: WORKPLACE SAFETY

### ANIMAL HANDLING

Always try to work with someone else when working with livestock.

Always have an escape route. Never put an animal between you and the way out.

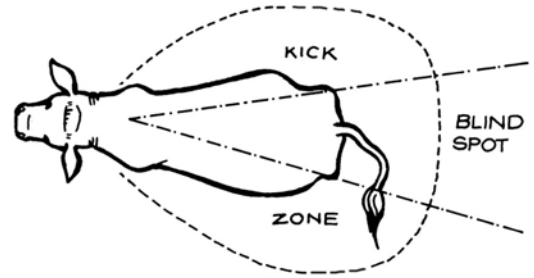
Stay alert, as you may have to move quickly.

Never turn your back on an animal. Always keep them in your line of vision.

Stay out of their kick zone. Animals most often kick as a fear response.

Cows with calves can be quite aggressive. Do not put yourself between a cow and a calf.

Never tie an animal to your body or wrap leads around your hand.



### EQUIPMENT

Many of the injuries related to the care and handling of animals are inflicted by machines, tools or structures rather than the animals themselves.

Keep pitch forks and other sharp tools stored properly out of the way.

Heat lamps should be solidly supported and shielded.

Faulty or homemade electric fence controllers can kill animals and humans.

Panels should be securely fastened when storing.

Waterers should be kept clean and free of ice and build-up. Electrical parts must be maintained.

#### Gloves

- Should be worn at all times
- Rubber ones when treating sick animals or assisting birth
- Leather or work gloves at all other times
- The gloves should fit snug to the hand as loose gloves may get caught in equipment and will jeopardize your grip.



## HANDLER

Take time to train new workers - never assume that an individual knows what to do. All livestock operations should have written safety guidelines.

Respirators should be worn when cleaning up, handling dusty or moldy feed, working in silos and manure storage facilities, and for some pest control operations.

Safety eye wear can shield eyes from dust, chaff, chemicals and flying pieces. All prescription and sunglasses worn at work should have impact resistant lenses and sturdy frames.

Safety shoes should be a standard part of every farmers wardrobe. Steel toes and a rugged sole are necessary for adequate protection. Be sure the soles are skid resistant for good traction.

Strains and dislocations can result from improper lifting of heavy objects such as bags of feed, supplies or animals.

Remove animals and people when agitating manure pits. Fence off area and post danger signs.

Experienced people only should be present during branding or processing. Visitors are often injured and cause undue stress to the animal.

Never put an animal between you and the way out.

## FACILITIES

Regular facility checks should be performed on all equipment and facilities.

All facilities should be designed to allow easy access to and exit from animals and to ensure it is never necessary for workers to enter a small or enclosed area with animals.

Keep your work area clean and free of debris. Check for and eliminate any sharp corners or protrusions in walkways.

Check to ensure that all latches and levers can't easily fly open.

Clean concrete ramps and floors regularly to prevent slips and trips.

Maintain ventilation in livestock buildings. Ammonia and other gases can irritate your lungs and those of your animals.

All holding pens should be equipped with a man-gate or other means of quickly vacating the pen if necessary.

Lighting should be even and diffused. Bright spots and shadows should be eliminated.

Keep electrical boxes out of livestock confinement areas such as stalls. Use wiring materials designed for damp locations. Protect light fixtures and wiring from animals.

Frequently clean the barn with a pressure washer to reduce dust build-up. If a heated building, keep the heating units clean and functioning properly.

Distractions that slow animals or cause them to balk can include: hats or coats, hands or arms, backstop chains, backstops, drains.

Look down the alley or across the pen to see what the animal is seeing - not what you see.

Be sure the handling facilities are sturdy enough to restrain and contain the animals that are worked within it.



## Gates



Gates should swing freely and not drag on the ground.

Never close a gate on an animal as they are trying to go through it.

Never put your hand in jeopardy by grasping a gate.

Never climb over gates - open them. Climbing on them will lead to dragging gates on bent hinges.

Never try to open a gate when animals are pressuring it from the other side.

Never stand between a gate and a solid wall or fence.

Never stand directly behind a gate when working livestock - stand beside it.

Gates should be properly latched.

Make sure slide gates are open all the way.

## Zoonoses

Animals, domesticated or wild, can be a source of human illness and parasite infection. Such diseases transmitted between animals and man are often referred to as zoonoses.

**Ringworm** is the most common animal to human disease and is highly infectious.

**Burcellosis** or bangs disease afflicts cattle, goats and swine. It can be transmitted from infected animals to man through raw milk, from contact of an open sore or wound with an aborted fetus or after-birth or, from carcasses at the time of slaughter. Undulant fever is a severe and tenacious malady that you can avoid through good sanitation and management. Animals should be tested regularly and removed if infected.

**Bovine Tuberculosis** is much less common today due to rigorous testing and elimination of infected animals. As bacteria are found in any body secretion or discharge, handling tubercular livestock is a health risk. Protective measures are regular testing and slaughter of those showing positive reaction.

The **tetanus** organism is found in the intestinal tract of animals, especially horses. The spores are introduced into a person's body by contamination of a wound with soil, street dust or fecal material. Tetanus is a horrible disease with a high fatality rate; therefore all rural people should be immunized, every 5 to 7 years.

**Leptosporosis** in humans can be a serious ailment. Domestic livestock are carriers and it can be passed to humans through contact with infected urine or with soil, feed, water or other materials so contaminated. Once on the farm, the disease is hard to eradicate.

**Cryptosporidium** is a disease that most often affects weak animals with diarrhea and can lead to vomiting and fever. Humans can become infected through transfer of fecal matter.

**Chamydia trachomatis** or **chamydia psittaci** can be contracted while lambing sheep. This can cause spontaneous abortions in women.

**Salmonella** organisms are found in poultry and wild and domestic animals. It can be transmitted to man through contaminated water and food.

Other zoonoses that farm people should guard against include swine erysipelas, animal pox, tape worm, newcastle disease, histoplasmosis, psittacosis (parrot fever), gastroenteritis, endocarditis (Qfever), hydatid, tularemia, listeriosis (meningitis) and insect bomediseases such as spotted fever (ticks) and equine encephalitis (mosquitoes).

### Means of Prevention:

- Keep animal quarters clean.
- Immunize animals and keep them free of parasites.
- Quarantine or remove sick animals.
- Don't unduly expose yourself to any sick animal.
- Wear rubber gloves when treating sick animals or assisting at birth especially if you have any open sores or wounds on your hands and arms.
- Always wash up and change clothes after assisting or treating an animal.
- Call your doctor if you become ill after contact with an animal.