Section 3: Animal Husbandry
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**Key Takeaway:**

The care and treatment an animal receives greatly impacts its state of welfare as well as its ability to function efficiently. There is much that producers can do to ensure that the care and treatment they are providing is positively contributing to these outcomes.
By completing the *Animal Husbandry* section of the eLearning tool, members will be able to:

- List the Five Freedoms of Animals and the characteristics of an animal in a good state of welfare.
- Describe the limitations around cattle’s sight, and how one can use the point of balance to move cattle with ease.
- Name various cattle behaviours that should be kept top of mind when handling cattle.
- Adopt best practices for use of personal protective equipment.
- Identify different components of cattle facilities and considerations for designing your own.
- Recognize the importance of traceability and compliance with animal identification regulations.
- Describe the difference between ruminants and monogastrics, as well as the mature beef animal’s and a calf’s digestion. Also, label the parts and the path of the mature beef animal’s digestive tract.
- List the Five Essential Nutrients and explain why a watering plan is so important.
- Expand on why function and other factors affect the nutrient requirements of cattle.
- Give examples of concentrates, roughages and supplements.
- Express how feed analysis can better help you to achieve a properly balanced ration.
- Explain how a herd health planning focuses on prevention and why record keeping is such an important aspect of a herd health plan.
- Label injection sites for vaccinations or medications.
- Walk through what they’d do if they suspected their animal was sick.
- Explain what biosecurity is.
Lesson 1: Animal Care & Welfare

Reference Sheet: Animal Care versus Animal Welfare
Reference Sheet: Five Freedoms of Animals
Activity Sheet: Five Freedoms of Animals

Lesson 2: Safe & Effective Animal Handling

Reference Sheet: How Cattle See
Reference Sheet: Point of Balance
Reference Sheet: Flight Zone
Reference Sheet: Cattle Behaviour
Reference Sheet: Personal Protective Equipment (PPE)

Lesson 3: Facilities

Reference Sheet: Cattle Facility Considerations
Reference Sheet: Cattle Facility Components
Activity Sheet: Handling System Design

Lesson 4: Animal Identification

Reference Sheet: Identification Tags & Traceability
Diagram: Applying Identification Tags

Lesson 5: Digestive System

Reference Sheet: The Ruminant Animal & Their Digestion
Diagram: Mature Beef Animal’s Digestive Tract
Activity Sheet: Mature Beef Animal’s Digestive Tract
Reference Sheet: The Calf’s Digestion
**Lesson 6: Nutrition & Feeding**

Reference Sheet: Essential Nutrient Requirements of Cattle
Reference Sheet: Function & Other Factors Affecting Cattle’s Nutrition Requirements
Reference Sheet: Concentrates, Roughages & Supplements
Reference Sheet: Conducting a Feed Analysis
Activity Sheet: Steps for Formulating Rations
Reference Sheet: Devising a Watering Plan

**Lesson 7: Animal Health**

Reference Sheet: Herd Health Planning
Reference Sheet: Vaccination Program
Diagram: Injection Sites
Activity Sheet: Injection Sites
Reference Sheet: You Suspect Your Animal is Sick
Reference Sheet: Biosecurity
Reference Sheet: Record Keeping
Reference Sheet

Animal Care versus Animal Welfare

There’s an important distinction between animal welfare and animal care. Animal welfare refers to the state of the animal, or in other words, how it’s coping with the conditions it lives in. Animal care, often called animal husbandry, refers to the specific treatment or care an animal receives.

Protecting an animal’s welfare means providing for both its physical and mental needs, including:

- Disease prevention and treatment by a veterinarian;
- Appropriate shelter, management, nutrition, and;
- Humane handling, slaughter or euthanasia.

An animal is in a good state of welfare if it is:

- Healthy;
- Comfortable;
- Well nourished;
- Safe;
- Able to express natural behavior, and;
- Is not suffering from pain, fear, or distress.

So while animal care involves taking care of the animal’s basic needs, animal welfare refers to the overall physical and mental state of an animal. Producers are responsible for both the care and welfare of their animals. The livestock industry and its regulators do not tolerate animal neglect or cruelty.
Reference Sheet

Five Freedoms of Animals

The five freedoms are the basic needs of animals that producers should provide while animals are under their care:

1. Freedom from thirst, hunger and malnutrition by providing access to fresh water and a healthy diet.
2. Freedom from discomfort by providing a suitable environment including shelter and a comfortable and clean resting area.
3. Freedom from pain, injury and disease through prevention as well as quick diagnosis and treatment.
4. Freedom to express normal behaviour by providing sufficient space, proper facilities and company of the animal’s own kind.
5. Freedom from fear and distress by ensuring conditions don’t create mental suffering.
Member Activity Sheet

Five Freedoms of Animals

Instructions: Write down what you are doing to ensure that your animal or animals are having each of their five freedoms met.

1. Freedom from thirst, hunger and malnutrition by providing access to fresh water and a healthy diet.

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2. Freedom from discomfort by providing a suitable environment including shelter and a comfortable and clean resting area.

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3. Freedom from pain, injury and disease through prevention as well as quick diagnosis and treatment.

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4. Freedom to express normal behaviour by providing sufficient space, proper facilities and company of the animal’s own kind.

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5. Freedom from fear and distress by ensuring conditions don’t create mental suffering.

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Reference Sheet

How Cattle See

The physical limitations and the natural behaviours of cattle should be kept in mind at all times for safe, low-stress and effective handling. Doing so will result in a reduced risk of stress and injury for both the animal and the producer. One thing that’s important to understand is that cattle see very differently than humans, and have certain vision limitations. Cattle’s eyes are located on the sides of their head, giving them excellent wide-angle vision.

The downside of cattle having wide-angle vision is that their lack of depth perception at ground level when walking with their heads up. So in addition to having a hard time seeing what’s behind them, there’s only a very small area directly in front of them that cattle can clearly see. This may explain why cattle balk at distractions such as a sudden change in floor level or texture, loud noises, flapping objects, unfamiliar smells as well as contrasting shadows, patterns and light.
When handling cattle, producers keep the vision limitations of cattle in mind and take care to position themselves so that the animal is able to see them. Producers use the point of balance, which is usually in line with the animal’s shoulder, to move cattle with ease. Cattle move forward or backwards depending on the position of the handler in relation to the animal’s point of balance.

Cattle will move forward when the handler stands behind the point of balance.

Cattle will move backwards when the handler stands in front of the point of balance.

Groups of cattle in a chute will often move forward when the handler walks past the point of balance in the opposite direction of each animal in the chute - no prodding necessary.
Reference Sheet

Flight Zone

Think of the animal’s flight zone as a human would of their own personal space. If a stranger stood too close to a human, they’d most likely feel uncomfortable and move away. The same principle can be applied to cattle - if someone or something unfamiliar enters their flight zone they will move away.

Every animal has a flight zone, but the size of it will vary between animals and situations. If the animal is familiar with its surroundings and the person approaching, the flight zone decreases or disappears and the handler will be able to get closer to the animal.

If the animal feels threatened or scared or if it is approached head-on, its flight zone increases in size and the animal will move sooner.

The flight zone typically decreases when an animal is in a single-file chute, but if the animal rears in the chute, back off. Handlers who understand the concepts of point of balance and flight zone will be able to move animals with greater ease.
Reference Sheet

**Cattle Behaviour**

By understanding cattle behaviour, producers can adapt their handling methods accordingly. Like humans, cattle are more likely to remain calm if those who are dealing with them remain calm.

Here are some things every good cattle handler should know:

- Cattle like to travel in pairs or trios, they don’t like to be alone.
- Cattle have a strong herd instinct to follow the leader and are more likely to move if they can see others ahead of them.
- Cattle move naturally in a circular manner and will stop if they seem to be approaching a dead end or a sharp turn.
- Cattle respond negatively to non-uniform light or shadows and to sudden movement or noises from people or objects.
- Cattle move at their own speed. Pushing or prodding or yelling only agitates them and makes them more difficult to handle.
- Cattle have long memories. If the last time through a handling system was rough, or they received a vaccination or injection, they may be more stressed or difficult to handle the next time through.
When handing animals, producers can protect themselves by using the appropriate personal protective equipment. Here are some considerations when it comes to PPE.

**Footwear**
- Safety footwear is especially important around large animals where there is a possibility of having a foot stepped on.
- Western boots or closed toe shoes with non-slip soles are ideal.

**Clothing**
- Choose fitted clothing. Clothing that is too loose may become tangled or get caught on something.
- Remove watches or loose jewelry before working with cattle.

**Lung Protection**
- Protect lungs with a dust mask or respirator when there are dusty conditions.

**Skin Protection**
- Long sleeved shirts and pants can protect individuals treating livestock that may be infected with disease.
- It is also important to protect oneself from sun damage by wearing sunscreen, sunglasses and a brimmed hat.

**Work Gloves**
- Work gloves can prevent cuts and scrapes. Work gloves are also important to protect hands while halter training.
- When administering medications or during activities such as tattooing it is beneficial to wear latex or silicone gloves.

**Goggles or Face Shield**
- Eyes are very vulnerable to injury. Eye protection with goggles or a face shield is important for preventing damage due to an object or chemical getting into one’s eye.

**Sharps Container**
- Be sure to always handle sharp materials with care. Separate sharp materials from other waste as soon as you’re done with them, then dispose of them safely.
Each producer needs cattle facilities that work for their cattle as well as their own unique situation. In addition to animal welfare and behaviour, producers consider a whole bunch of different things when creating their facility plans:

- The purpose of the facility.
- Current facility components.
- Cost.
- Local weather.
- Land topography and environmental stewardship.
- The type, size, weight and number of cattle.
- How temporary or permanent they may want their components to be.
- Applicable regulations and guidelines for their selected location.
- Labour available.
- Time available for management and upkeep.
- Possible future additions they may be considering.

A well thought out facility will promote the well-being of cattle, which in turn benefits producers.
There are a lot of different facility components and layout options, so it’s important that producers choose what works the best for their operation’s needs.

**Watering System**
Watering systems allow for an animal’s basic water requirements to be met. Before choosing which watering system components you’ll use as part of your facility, you need to consider the available water sources and the amount of water needed. Animals with easy access to enough good quality water are healthier and more productive.

**Feeding System**
Feedings systems allow for the basic feed requirements of animals to be met. It allows feed to be distributed appropriately to specific animals. Before choosing which feeding system components you’ll use as part of your facility, you need to consider the type and amount of feed being fed, feeding frequency and whether you’re feeding an individual or a group of animals. Animals that are fed properly have the greatest chance to be efficient and productive. The right feeding system will also reduce the amount of feed that goes to waste.

**Fencing**
Whether temporary or permanent, fencing is used for containment and to keep groups of animals separate. Fences can also help guide animals that are being moved.
Reference Sheet Cont.

Cattle Facility Components con’t

**Shelter**
Shelter allows animals to better cope with the extreme weather conditions that can occur throughout the year - which in Canada is pretty much a guarantee! Access should be given to areas, either natural or man-made, that provide relief from weather that is a serious risk to an animal’s welfare. Animals with appropriate shelter have more energy to put into production.

**Handing Facility**
A complete cattle handling facility has the appropriate equipment for safely handling, restraining, treating, segregating, holding, loading and unloading cattle.

**Corrals**
Corrals are the most typical component of handling facilities. Corrals are used to facilitate moving, segregating and holding specific groups of animals.

**Handling System**
A properly designed handling system allows for the safe, low stress and efficient flow of animals through it.
**Member Activity Sheet**

**Handling System Design**

Instructions: Cut out the puzzle pieces and place them accordingly for a complete image of various cattle handling systems.

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Radio Frequency Identification Tags

Radio Frequency Identification tags (RFID tags) are applied to the ears of beef cattle to assist with the identification and traceability of the animal. Each RFID tag has a written and electronically pre-programmed number that is associated with the animal wearing it, much like a license plate on a truck. Each animal’s number acts as a unique and accurate identifier. The tag can be read visually, or it can be scanned through the use of radio frequency technology using hand-held or panel readers.

RFID Tags & Traceability

The beef industry is committed to protecting animal health, public health and food safety and traceability is key to that. The Canadian Food Inspection Agency regulates and enforces animal identification, while the Canadian Cattle Identification Agency (CCIA) administers the identification program and manages the national Canadian Livestock Tracking System (CLTS) database.

The CLTS database allows producers to record tag information that relates to the three pillars of traceability: animal identification, premise identification and animal movement. This way, instances of serious animal health, public health or food safety concerns can quickly and easily be traced and contained. Producers can also enter value-added information, like age verification details, into the CLTS.

It is a federal requirement that all beef cattle raised in Canada be tagged with an approved CCIA RFID ear tag prior to leaving the farm they were born on, also called their “herd of origin.” These tags prove valuable in the event of an animal disease outbreak or natural disaster, and play an important role when it comes to customer assurance and effective herd management.

Management Tags

In addition to RFID tags, many producers also use management tags with a number and colour of their own choosing for easy identification within their own herd. They are particularly useful when identifying the animal in a pasture or pen as they can be read visually from a distance, eliminating the need to run the animal through the chute to get close enough with a RFID tag reader.
Applying Identification Tags

**Applying RFID Tags**

Placing the tag within the first ¼ of a beef animal’s ear between the two ribs is best. Doing so minimizes the risk of bleeding, infection as well as the tag catching on something and being pulled out of the animal’s ear. Be sure to follow the manufacturer’s directions to ensure the tags stay on! Correct placement is also important for easy scanning.

**Applying Management Tags**

Insert in a similar manner, within the first ½ the same ear or the other ear.

**Tips for Making Sure Tags Stay Put**

- Properly restrain the animal so it cannot move its head while you are applying the tag.
- Use the recommended tag applicator and pin for the specific tag type and brand, and follow the manufacturer’s directions.
- Make sure the tags and applicators are clean.
- Wipe clean and disinfect both sides of the animal’s ear before applying the tag.
- Apply antiseptic to tags and tag applicator between tagging different animals, this will help to control infection.
- Do not apply a new tag in a hole from a previous tag.
Reference Sheet

The Ruminant Animal & Their Digestion

**Ruminants versus Monogastrics**

Cattle are called ruminants, meaning that they have a digestive system which includes one stomach with multiple stomach compartments. Each of these stomach compartments has their own special job to help the animal efficiently digest its fibrous diet.

Humans and animals such as pigs and horses are monogastrics - meaning that they have one stomach that has one compartment. Cattle and humans have different types of digestive systems because they eat very different things. To remember which stomach-type is which, just think of it this way, “mono” means one and “gastric” means stomach.

**The Digestive Tract**

Food enters through the mouth and travels down the esophagus to the rumen, the largest stomach compartment in a mature beef animal. The rumen acts like a huge fermentation vat in which enzymes and the mixing-action caused by the contraction of the muscle walls process the animal’s diet for further digestion.

The reticulum is a small extension of the rumen and its main function is to help form “cud” for regurgitation. The reticulum also traps anything that the animal may have accidentally eaten such as a nail or piece of wire.

In the omasum, food is further broken down into smaller pieces so that it can enter the abomasum. From here, digestion proceeds the same as a monogastric animal - going through the small and large intestines and then out the anus.

**Ruminating or Chewing Cud**

When a mature beef animal first ingests their food, they don’t really chew that much before swallowing it. They will regurgitate the food later for a more thorough chewing. The ball of food they regurgitates is called “cud”. Ruminants are known for chewing their cud and a word for “chewing cud” is ruminating! That's where ruminants get their name.

**Eructation or Belching**

As part of their digestion, cows belch. When their cud is regurgitated, the fermentation-gas produced in the rumen is also forced up and out through the esophagus resulting in a belch or “eructation” necessary for eliminating the gas produced. If they didn’t eructate then they’d end up bloating.
Diagram

Mature Beef Animal’s Digestive Tract
Member Activity Sheet

Mature Beef Animal’s Digestive Tract

Instructions: Correctly label the animal’s digestive tract.

- Rumen
- Mouth
- Reticulum
- Small Intestine
- Large Intestine
- Anus
- Omasum
- Abomasum
- Esophagus
A calf’s rumen is actually the smallest of the stomach compartments when it is very young. An esophageal groove is formed when the calf is nursing from its mother or a bottle. Muscular folds form a tunnel that allows colostrum or milk to travel straight through to the abomasum. The suckling reflex and milk protein stimulate the groove to open. The formation of the esophageal groove is essential for newborn calves and their digestive health.
A properly balanced diet is just as important for cattle as it is for humans. It is necessary that the animal’s daily nutrient requirements are being met through their diet - better known as a ration.

A nutrient is a substance that provides the nourishment needed for life. Failing to provide an essential nutrient in an animal’s ration would be like forgetting a key ingredient while baking a cake. In both cases, the end result wouldn’t be what you’d want it to be.

The five essential nutrients that cattle require on a daily basis are:

- Water
- Protein
- Energy
- Vitamins
- Minerals
Feeding a balanced ration is important in that it ensures that your cattle are getting the right amount of nutrients in the correct proportion.

The nutrient requirements of an animal depends on its function or type. A nutrient requirement is the amount of a specific nutrient that is required to meet an animal's minimum need in order to function properly (maintain, grow, produce or reproduce). For example, the weaned steer calf, two-year old lactating cow and mature bull all require the five essential nutrients but in different amounts due to their different functions.

Before they can determine an animal’s nutritional requirements, producers must determine whether the animal’s main function should be:

- Maintenance
- Growth
- Production
- Reproduction

Factors other than function affect the amount of nutrients the animal requires too, including:

- Environmental factors, such as extreme temperatures and wind
- The animal’s frame size and condition score
- Whether the animal is female or male
- The animal’s health status
- The age of the animal
- The animal’s level of activity
Producers typically provide roughages, concentrates as well as supplements. What producers feed their cattle depends a lot on what feedstuffs are available to them.

Concentrates are high in energy or high in protein, and are low in fibre. Concentrates are typically grains such as barley or wheat.

Roughages are high in fibre. Grass, hay, silage, straw and other forages are roughages.

Supplements are a good source of one or more nutrients. They’re man-made and may be added to a ration to correct or prevent a nutrient deficiency, or in other words, balance the ration. Supplements may contain high levels of energy, protein, minerals and/or vitamins – basically, anything that may be missing in the ration.
Conducting a Feed Analysis

A balanced ration is one that supplies nutrients in the proper amount and proportion for an animal’s function. To formulate a balanced ration you’ll need to know the animal’s nutrient requirements, in addition to how nutritious your feed is.

The best way to find out more information about your feed is to have it analyzed. This test can tell you a lot - including, but not limited to the level of nutrients in your sample, the moisture level and how easily digestible it is. Having feed analyzed will help you decide if supplements are necessary, and if they are, the type and amount needed to achieve a balanced ration.

To get a feed analysis done, contact a feed analysis laboratory. They will provide specific instructions on how to take a sample and submit feed for analysis. They will also provide a list of all the different tests they can do, and how much each test costs. The staff at feed analysis laboratories and local feed companies, as well as veterinarians and cattle nutritionists are great sources of information on this topic!

When you get your feed analysis results back, you can then compare the results against the nutritional requirements of the type of animal you’re feeding. Then, you’re ready to start balancing rations for your cattle. By formulating balanced rations, you are more likely to increase animal nutrition and lower feed costs. Overfeeding, underfeeding and/or feeding nutritionally are inefficient management practices. But remember, changes to cattle’s rations should be made gradually.
**Member Activity Sheet**

**Steps for Formulating Rations**

Instructions: Order these ten steps correctly.

1. Compare the results of the feed analysis with the nutritional requirements of the animal(s) being fed to determine the difference between what the feed can provide, and what your animal(s) needs.

2. Evaluate your feeding program on an ongoing basis so that you can be proactive when it comes to any issues or necessary changes.

3. Determine the nutrient requirements of the animal(s).

4. Determine how and where to feed cattle.

5. Determine the target or goal estimated finished weight and average daily gain you’re aiming to achieve during the feeding period.

6. Determine what kind of feed is readily available.

7. Determine the primary function of the animal(s). Is it Maintenance, Growth, Production or Reproduction?

8. Contact a feed analysis laboratory about conducting an analysis of your feed. You may also talk to the staff at your local feed company, your veterinarian or a cattle nutritionist.

9. Balance the ration by hand or by using ration balancing software. Evaluate and compare various feedstuffs to determine which combination is most cost-efficient.

10. Consider factors in addition to function that may affect the amount of nutrients the animal requires. Factors may include the animal’s health status, sex, age, frame size, condition score and level of activity, as well as environmental factors.
Devising a Watering Plan

Water helps the body to function in so many different ways we really couldn’t live without it - and neither could cattle! Here’s information on Water from Section 2 of the Beef Cattle Code of Practice. For the complete document, including appendices, visit www.nfacc.ca/codes-of-practice/beef-cattle.

WATER

Cattle need access to water of adequate quality and quantity to fulfill their physiological needs. Water availability and quality are extremely important for cattle health and productivity. Beef cattle will drink between 26-66L (5-14gal) per day (13). Water quality and palatability affect water consumption. Cattle may limit their water intake to the point of dehydration if the quality of drinking water is compromised (14).

Snow is used as a water source in some extensive western Canadian beef operations. There is scientific evidence that cattle can maintain body condition using loose snow for water under certain specific conditions (15). These conditions can be highly variable, and can result in risks to cattle welfare if they are not carefully monitored. These variables include snow conditions and quality, feed quality, cattle body condition and weather conditions.

It is extremely important to ensure there is a sufficient supply of loose, clean snow (15,16). Further, cattle with higher energy requirements (such as growing, lactating or in poor condition) risk losing excess energy when accessing and melting snow. It can take inexperienced cattle several days to learn to consume snow as a primary water source so they should be monitored during this acclimation period (17). Using snow as a sole winter water source is not appropriate in all geographic areas, even within the same province. Contact your local or regional beef cattle specialist or your veterinarian for advice (See Appendix G).
Reference Sheet

Devising a Watering Plan con’t

**REQUIREMENTS**

Ensure that cattle have access to palatable water of adequate quality and quantity to fulfill their physiological needs. Monitor water sources, feeding habits, behaviour, performance and health on an ongoing basis and be prepared to adjust the watering program accordingly.

Snow may only be used as a sole winter water source providing it is of sufficient quantity and quality to meet the animals’ physiological requirements.

Snow must not be used as a sole water source for the following cattle:

- lactating, or
- newly-weaned, or
- that have a body condition score of less than 2.5 out of 5, or
- that don’t have access to optimal feed resources.

Only adequate quantities of clean, loose snow may serve as the sole water source. Monitor snow conditions on an ongoing basis.

Have a back-up water source in the event of insufficient loose snow or an interruption in water supply.

**RECOMMENDED PRACTICES**

a. ensure that water sources are easy for cattle to locate and access
b. manage cattle and water sources to avoid competition that would limit access to water
c. check automated water sources daily to ensure they are dispensing properly
d. test water quality in the event of problems such as poor performance, reluctance to drink, or reduced feed consumption
e. if utilizing natural water sources, provide water in troughs or bowls wherever possible to ensure cleanliness of water supply and safe animal access
f. be aware of the signs of stray (tingle) voltage around water sources, such as reluctance to drink or reduced feed consumption
g. if using a frozen-over natural water source in winter, provide an area of open water and restrict cattle from areas of thin ice.
When it comes to keeping cattle healthy, it’s important that producers work with their veterinarian on a prevention-focused Herd Health Plan. The time and money spent preventing injury, illness and disease is usually much less costly to producers than treating an individual animal or the whole herd. That’s why having a Herd Health Plan is such an important part of an overall animal husbandry and management program.

Because each herd is different, there’s no one-size-fits-all approach when it comes to creating a Herd Health Plan. So, producers should work with their veterinarian to create a yearly plan that works best for their herd.

A typical Herd Health Planning session with your veterinarian may cover the following topics:

- How to create a healthy living environment for animals.
- A vaccination program and parasite control.
- What to watch for when monitoring or observing animals.
- What to do if one suspects an animal is sick or unhealthy.
- Preventing exposure to sickness or disease and preventing its spread if exposure occurs,
- And last but not least, proper record keeping.

One of the most important things that producers can do to keep their animals healthy is provide them with a safe and healthy living environment. An environment where:

- Stress and discomfort are minimized.
- Normal behaviours can be expressed, and
- There is nutritious feed and plenty of quality water or snow.
Vaccination is the administration of a vaccine to increase immunity, or in other words, strengthen the ability to fight-off illness or disease. A vaccination program is a really important part of a Herd Health Plan.

Producers and their veterinarians discuss what they’re going to vaccinate the herd against. They look at what was an issue last year and anticipate what may be an issue this year. They will also review the proper handling, storage and administration techniques and protocols for the vaccines that they’ve chosen. These factors, along with the timing of vaccination, can have a huge impact on how effective your vaccination program is.

When it comes to vaccinating your herd, timing can be everything. It’s important that the herd’s vaccination schedule is in sync with the overall production and management cycle. A veterinarian that is familiar with the herd can help producers to time vaccinations correctly to maximize the benefit in terms of disease prevention and cost effectiveness.

Remember to have a vaccination plan in place ahead of time, use proper cleaning, sanitation and disposal practices, always follow the manufacturer’s directions and consult your local veterinarian if you have any questions or concerns when it comes to your vaccination program.
Diagram

Injection Sites

Vaccines are typically injected Subcutaneously (beneath the skin) or Intramuscularly (directly into the muscle). It is recommended that producers use vaccines that can be injected using the subcutaneous, or subQ, method whenever possible. They should be injected under the loose skin of the neck, in front of the shoulder. If a vaccine must be given intramuscularly, inject it into the muscles of the neck, also in front of the shoulder. Never inject in the hip or thigh.
Member Activity Sheet

Injection Sites

Where would you inject this animal Subcutaneously?

Where would you inject this animal Intramuscularly?
Reference Sheet

**You Suspect Your Animal Is Sick**

Observe, observe, observe! Producers who carefully monitor their herd are more familiar with their animals and will therefore have a better idea of what’s normal and abnormal for them. Generally, healthy animals have the following characteristics:

- Consumes feed provided, ruminates and manure is normal.
- Consumes water or snow and urine is normal.
- Has a shiny coat, bright and clear eyes, bright and clear nose, upright ears and is in good condition.
- Is alert and exhibits normal behaviours.
- Stands easily and walks with a normal gait.

If a producer has observed a visible injury or an abnormality in an animal’s appetite, manure, urine, condition, behaviour, stance or gait they should examine the animal carefully. Note any symptoms, such as abdominal swelling or discharge from the eyes, nose or mouth and check the animal’s vital signs.

**Vital Signs of Cattle**

The **temperature** of cattle may vary depending on a number of factors (such as age, recent physical activity, stage of digestion or gestation, time of day or environmental factors) but when measured with a rectal thermometer, the normal temperature should be 38 - 39 degrees Celsius.

The **heart rate** can be measured with two fingers on the animal’s pulse, in one minute you should count 40-80 beats.

The **breathing rate** of an animal at rest should be 10-30 breaths per minute. When observing the breath, see if the animal is having any difficulty by listening to and watching the breaths. Remember, normal breathing should be noiseless except when the animal is exercising or at work.

Producers may then call their veterinarian and explain the injury or the symptoms they have observed and recorded. The veterinarian will provide a diagnosis and the appropriate treatment options, which may include medication.

For any medication that is given, it’s important to follow the veterinarian’s and the manufacturer’s instructions in regards to handling, storage and administration. Also be sure to ask about withdrawal periods.
Biosecurity practices help to prevent and reduce the introduction and spread of illness or disease amongst animals. Isolating sick animals from the rest of the herd while following proper cleaning, sanitation and disposal procedures for equipment and facilities are just a few things producers can do to prevent the spread. The same goes for when you’re introducing outside animals to your herd! Take the necessary precautions and quarantine new animals for at least three weeks so that you can monitor them for illness or disease before introducing them to the rest of the herd.
Reference Sheet

Record Keeping

Good record keeping is the glue that keeps a producer’s Herd Health Plan together. Using an electronic or paper system, producers should keep up to date records on each individual animal in their herd.

When it comes to keeping track of the health of your herd, a note should be made any time a health abnormality or injury is observed, a vaccination, diagnosis, treatment or medication is given, or when an animal has to be re-tagged. When new animals are introduced to the herd, their health record should be added to your herd health records as well.

Veterinarians find accurate and complete herd health records to be extremely useful when it comes to diagnosing an animal or analyzing how effective the Herd Health Plan was, so that necessary improvements can be made for next year. Remember, a healthy herd is a productive herd!