



Guide for Backyard Goat Owners of New Brunswick



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Contributions made by Future GNB students
in the Summer Veterinary Program



Acknowledgments

The **Guide for Backyard Goat Owners of New Brunswick** is designed for people interested in raising goats on a small-scale basis. You might be new to owning goats or you may have been managing goats for a while and have questions about different aspects of goat management. The objective of this guide is to provide you with information in key areas to help you raise goats successfully and responsibly. This manual is only a guide and any in-depth questions should be addressed by contacting a veterinarian.

Content was compiled from various sources, main sources were:

- Barn and Shelter Requirements (2022) - <https://thefarminguy.com/type-of-shelter-do-goats-need/>
- Canadian Agri-Food Research Council Goat Code of Practice (2003)
https://www.nfacc.ca/pdfs/codes/goat_code_of_practice.pdf
- Cleaning (2022) - <https://couchtohomestead.com/keeping-a-goats-pen-clean>
- Fencing (2022) - <https://insteadof.com/blog/goat-fencing/>
- Goat Extension (2019) <https://goats.extension.org/>
- Importance of Space (2020) - <https://farmandanimals.com/how-much-space-does-a-goat-need/#:~:text=If%20you%E2%80%99re%20keeping%20dairy%20goats%20and%20For%20meat%20Ogoats%2C.space%20also%20reduces%20the%20risk%20of%20parasite%20infestation>
- Manitoba Goat Association (2008)
<https://www.gov.mb.ca/agriculture/livestock/production/goat/pubs/goat-health-management.pdf>
- New Brunswick Department of Agriculture, Aquaculture and Fisheries Carcass Disposal (2014)
<https://www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Agriculture/Livestock-Betail/CarcassDisposalGuidelines.pdf>
- Nova Scotia Goat Manual <https://novascotia.ca/thinkfarm/documents/Manual-Goat.pdf>
- Ontario Goat Sector Producer Handbook (2018) https://animalhealth.ca/wp-content/uploads/2019/09/AHEM_ON_Goat_Handbook.pdf

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Starting out

KEY POINTS

- Start small and take time to familiarize yourself with goats before starting or expanding your herd.
- Select a breed that best suits your goal.
- Ensure you have the right supplies, equipment, and resources on hand.

1.1 TERMINOLOGY

Term	Description
Buck	Sexually mature intact male goat
Buckling	<1 year old intact male goat
Doe	Sexually mature female goat
Doeling	<1 year old female goat
Freshen	A doe that gave birth and starts lactating
Kid	Baby goat of either sex
Wether	Castrated male goat

1.2 HOW MANY TO START WITH

Start small with two or three goats. They are social herd animals, so you don't want to start with just one. Two or three is a good start, so they will have a companion, and allows you to learn how to care for them and see if goat farming is right for you.

1.3 WHERE TO PURCHASE GOATS




It is best to buy from a reputable supplier, such as local groups or a breeder. When buying from social media, use caution and make sure all information provided is trustworthy.

IMPORTANT THINGS TO ASK WHEN PURCHASING A GOAT

When buying a goat, ask about the seller's level of biosecurity (do they buy a lot of goats, quarantine new goats, visit many goat farms), goat health status, vaccine history, feed, cleanliness, where they obtain their goats from and any other questions you feel that are necessary. Knowing this information will allow for a smooth transition into owning goats and will provide you with some background information. Asking to see farm records of the animals is a good idea.

1.3 BREEDS

When it comes to choosing a breed of goat, you need to know what goat fits your criteria best. There are numerous breeds of goats, however, these are the most common ones.

BREEDS	CHARACTERISTICS
Alpine 	<ul style="list-style-type: none">▪ Dairy breed▪ Variety of colors and patterns▪ Horned or polled
Boer 	<ul style="list-style-type: none">▪ Meat breed▪ Naturally horned▪ Lop-eared
Saanen 	<ul style="list-style-type: none">▪ Dairy breed▪ White coat▪ Erect ears▪ Horned or polled

Nubian



- All-purpose breed (often used as a dairy goat)
- Produce more butterfat
- Variety of colors and patterns
- Long pendulous ears and convex nose
- Horned or polled

LaMancha



- Dairy breed
- Variety of colors and patterns
- Unique ear conformation
- Horned or polled

Angora



- Fiber producers
- Small
- Naturally horned

Pygmy



- Pet breed
- Small

Nigerian
Dwarf



- Pet and dairy breed
 - Small
 - Usually horned
-

1.4 SUPPLIES AND EQUIPMENT

Depending on the purpose of the goats, the equipment you need will vary. Being prepared by having essential supplies for most situations will help you make effective and timely decisions, which will benefit you and your animals.

You should have a clean medical kit on hand, stored safely, which would include:

- Thermometer
- Medical gloves
- Vet wrap/bandaging supplies/gauze
- Syringes and needles
- Iodine or chlorohexidine

Additionally, you should have these on hand:

- Hoof trimmers
- Collar/harness and leads
- Hair clippers

Kidding supplies, if keeping pregnant does:

- Obstetrical lubricant (label marking it as safe/clean for intrauterine application)
- Scissors
- Umbilical tape/fine cotton twine
- Wide-mouth jar/lid and iodine for dipping navel
- Frozen colostrum
- Good quality goat milk replacer
- Nipple bottle

Depending on the reason why you are keeping goats, whether it is for their milk, meat, fiber or just as pets, additional specialized equipment may be needed.

1.5 EMERGENCY MANAGEMENT

Have an emergency plan prepared to protect your animals and your property in situations such as poor weather, disease outbreak, a goat escaping, equipment failure, or feed and/or water shortage issues. You should have an emergency contact list which may include your neighbors, feed and water (if needed) suppliers, veterinarian, exterminator, poison control, local animal shelter, animal care and control, transportation resources, local volunteer organization (fire department), etc. Your emergency plan should have two parts; an **“evacuation” plan** (e.g. where will you and animals go) versus a **“shelter in place” plan**

which will allow you to stay on the farm (e.g. have enough feed/water to remain on farm for 21 days is a suggestion).

1.6 CODE OF PRACTICE

The National Farm Animal Care Council has developed a code of practice that outlines proper care and handling techniques for goats. The code contains recommendations and guidelines for housing, nutrition, reproduction, herd management, production, and transportation. You can find the code of practice at <http://www.nfacc.ca/codes-of-practice/goats>.

Canada's codes of practice are educational tools used to bring awareness on husbandry and welfare practices, while promoting animal health and well-being. The management provided by the person or people responsible for the daily care of animals has a significant influence on the animal's comfort.

1.7 LEGAL REQUIREMENTS

A Livestock Premises Identification Number (LPID) in New Brunswick is currently voluntary for goat owners. However, the LPID allows for a rapid response to emerging disease outbreaks and emergencies (e.g. wildfire and floods). Registering your premises is free and will help protect New Brunswick livestock and industry. To register a livestock premises go to your nearest Service New Brunswick (SNB) office, Department of Agriculture, Aquaculture and Fisheries office or visit:

<http://www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Services/Agriculture/ApplicationNBAnimalPremisesIdentification.pdf>

Municipalities may have by-laws on where and how goats can be kept. Research your local area for by-laws and zoning.

Environmental management is very important when keeping livestock. Without good management practices, destruction of natural habitat, pollution, contamination of water sources and spread of diseases to you and your animals may occur. Good management practices should include:

- Grazing practices
- Manure management
- Proper medication, handling, storage, and administration practices

- Dead carcass disposal

Contact a veterinarian or livestock development officer with the New Brunswick Department of Agriculture, Aquaculture and Fisheries for information.

Housing and Management

KEY POINTS

- Determine a designated area for your goats with adequate space and fencing before purchasing.
- Goats should always have access to a dry and clean shelter.
- Upkeep is important inside their shelter and on pasture.

2.1 BARN/SHELTERS REQUIREMENTS

Goats are low maintenance animals, so basic shelters are acceptable for them. A two- or three-sided shelter may be appropriate. Do not use pressure treated lumber to build shelters as there are toxic substances present in the coating that are harmful to livestock.

Three-sided shelter

These types of shelters work well in all seasons. With a three-sided shelter, there are three walled sides and one open side. With the open side, good air flow is important. However, before placing the shelter, figure out which way the predominant wind blows on your property and have the open side face away from the predominant wind direction, opening to the south. If shelter is placed on a side hill, ensure there is good drainage for when it rains.



Three-sided shelter

Two-sided shelter

These types of shelters work best in the summer months, since it provides shade and good air circulation. Two sided shelters are not best in the winter or rainy weather due to the lack of sides. If necessary, roofing extensions could be added on to provide extra protection against rain or snow.

Flooring is important in both shelters because of the possibility of exposure to wet surfaces.



Two-sided shelter

Flooring

An simple flooring idea is one that consists of pallets fastened together for the base, plywood nailed on top of the pallets and hay as bedding on the top. This allows for a comfy and dry surface. There are other flooring options, but the goal is to provide a dry area that your goats can be comfortable.

Consider which type of shelter is best for you and your goats by researching common weather trends in your area.

If your goats are pregnant, a sturdy building is essential. Goats are vulnerable when pregnant or lactating, as well as their kids, therefore they should be kept in a predator proof building and away from harsh weather.

2.2 FENCING

One goat can manage 250 square feet of ground,(23 square meters) but this area needs to be adjusted according to how many goats you have. Make sure you have an adequate amount of space for your goats.

When building a fence for goats, it should be at least four feet tall (122 cm). If not, there is a good chance a goat could jump over. Depending on the type of breed you have, it might even be necessary to adjust it to five feet (152 cm). Not only is it important for the fence to be high but it also must be all the way to the ground. Goats could lay on their sides to crawl out underneath. Toys and raised platforms are great to

keep the goats entertained but take caution for a platform closer than five feet (152 cm) from the fence becomes a platform for them to jump over the fence. If there are platforms in their pen, make sure they are an acceptable height as goats can run and jump.

If there are gaps in your fencing big enough for a goat to stick its head through, make sure the gaps are closed. This is especially important for goats with horns as this could cause a deadly situation.

It is important to frequently walk the fence line where you keep your goats to look for any flaws in the fence, such as sagging, chewing or gaps formed by weak points.

When considering what type of fencing to purchase, consider height, gaps, soundness, price, what suits your property best and what holds up best in the environment where you live. Some of the most popular fencing options are wooden fences, woven goat wire and field fence, electric fence, goat panels or chain link fence. All these fences have advantages and disadvantages, but you need to choose what works best for you and your goats.

2.3 IMPORTANCE OF SPACE

A general rule of thumb is that a goat needs a bare minimum of 10 square feet (0.9 square meters) of indoor space and a minimum of 200 square feet (18.5 square meters) of outdoor space. Goats need to have enough room to each lay down comfortably and walk around in a normal position.

Goats are smart animals, so keeping goats in a small, confined space could have psychological consequences and create unwanted behaviors.

If you are keeping a goat simply just for companionship, they could be kept in a smaller space but will require lots of interactions, walks and toys. If you are keeping a goat for milk, fiber or meat, more space and opportunities to forage are essential. This will provide more relaxed animals that will produce better milk, fiber, or meat.

2.4 QUARANTINE AREA

When purchasing a new goat, on farm quarantine is important for health management. During quarantine, keep new goats away from the existing herd or other animals, give their necessary vaccines and observe goats for 4-6 weeks looking for any unusual behavior or signs of sickness. Clean and disinfect the quarantine area before bringing in more animals. Goats in quarantine should be looked after last when doing barn chores and designated water buckets, feed dishes, wheelbarrow and forks should be used in the quarantine area only.

2.5 CLEANING

The best way to maintain cleanliness is to replace bedding when needed, which depends on the type of bedding you are using and the number of animals. The goal is to keep the pen as dry as possible and use a disinfectant periodically (lime, a natural product, is commonly used before new bedding is added).

The best bedding for goats is hay, straw or pine shavings/sawdust. The main goal is to keep the bedding as dry as possible, so bedding should be absorbent and if possible, have the ability to neutralize the smell of ammonia from urine. Wet pens can lead to infections such as pneumonia which is a damage to lung tissue. Pneumonia can be seen if the ammonia concentration in the environment is high. A good rule of thumb is if you can smell urine (ammonia) then bedding needs to be changed more frequently.

Deep litter bedding

This method allows new bedding to be added on top of soiled bedding thus making a bedding/manure pack. The waste falls through spaces in hay and straw and composts at the bottom of the pile. It is recommended to start with 4 to 6 inches (10 to 15 cm) of bedding, and it can build up to 3 to 6 feet (91 to 183 cm) before it needs to be cleaned out. If you use this method, the litter normally is cleaned out twice a year, once in the spring and once in the fall. If done correctly, this is a safe way to house animals. However, for this method to work properly, smell and dryness of the pen are key.

How to Clean Deep Litter Bedding

1. Remove large piles of manure.
2. Apply a fresh layer of straw or hay once a week.
3. Completely clean out bedding in spring and fall (at a minimum).

Non-deep litter bedding

Essentially, non-deep litter bedding is providing a layer of bedding that is not as thick and which requires cleaning more often. Pine shavings/sawdust works best for this method because it is easy to clean and could serve as an air freshener. You could also use straw, hay, wood pellets as bedding. The goals with this method are the same as above, maintain dryness and eliminate ammonia (urine) smell in the pen.

How to Clean Non-Deep Litter Bedding

1. Relocate goats while cleaning.
2. Clean out all bedding every 10-14 days or sooner depending on space and number of animals.
3. Treat the floor (e.g. hydrated lime can be applied as a thin layer on the floor, but can be irritating and needs to be covered with bedding before animals are brought back in; agricultural lime may also be used in the same manner and is not as irritating).
4. Place new layer of bedding.
5. Air out pens if any smells are present that the goats do not like
6. Move animals back inside

If you need to further clean your goats' pen, you can use stall freshener, or baking soda and vinegar. Sometimes disinfectants may be needed if there is a concern about a virus, bacteria or parasite present in the pen. Consulting a veterinarian may be needed. Once you have decided how you will bed your pen (deep or non-deep), the frequency of cleaning will be determined by dryness and smell.

Besides general bedding, it is important to monitor the cleanliness of water and food dishes. Make sure goats always have a fresh water supply and that the areas they are eating out of are not contaminated with manure or mold.

2.6 PASTURE MANAGEMENT

Goats are very active foragers and can cover a large area in search for certain plant materials. They pick up small leaves, flowers, and fruits. Goats are the most versatile of livestock with respect to the variety of plants they eat, so it is important to assess the plant community before goats go into the pasture area. A pasture that is not good for cattle because of "weeds" could be great for goats. The pasture must include

plants that provide good nutrition, are tasty and interesting, can survive being “chewed down” and are not toxic to goats.

Nutrition plays an important factor in pasture management but as previously mentioned, you must have adequate fencing, shelter, and space for your goats to thrive.

Your pasture should be divided into a proper size for your herd size to ensure space and to prevent overgrazing. It is important to realize when animals are beginning to overgraze a field. Make sure you have enough leaves for plants to continue growing. If pasture is growing faster than goats can manage, you could harvest some for winter feed. Make sure pastures are well cared for so they will continue to grow back each year.

Feed and Water

KEY POINTS

- Developing a feeding program with a goat's essential nutrients is important.
- Know what quality of hay you are purchasing
- Important to recognize when your goats are underweight or overweight and adjust your feeding program as necessary.

3.1 GOAT DIGESTIVE SYSTEM

Goats are ruminants, meaning they are cud-chewing animals with a four chambered stomach. They regurgitate their food from a compartment in their stomach called the reticulum, chew the food and swallow it again. The specialized chambers of their stomach allow them to digest grass, hay, leaves, and branches. A kid's digestive system is different from an adult's digestive system and the nutritional needs of a kid are vastly different from that of an adult.

3.2 ESSENTIAL NUTRIENTS

Nutrition is the process of taking in food and turning it into energy. Proper nutrition is essential for growth, maintenance, reproduction, milk production, and fattening (important for meat breed goats). For each stage of development throughout a goat's life, it is important to know their nutritional requirements since it fluctuates as they grow.

The primary food nutrients for all animals are protein, fats, and carbohydrates. Secondary nutrients would be minerals, vitamins, and water. These can all be found in different types of feed, pasture, and legumes. Before feeding your goats, consider talking to a nutritionist to ensure you are going to be providing all of their essential nutrients to maintain good health.

3.3 CLASSES OF FEEDS

Concentrate Feeds

This feed includes farm grains, mill feeds, and manufactured supplements. Most common concentrates are oats, barley, wheat, and corn which may be combined. These feeds are often low in fiber and high in digestible nutrients. They supply large quantities of energy that animals can use quickly. Approximately 14 to 16 percent concentrate is appropriate to feed to goats, but this depends on their purpose (milking for example) and stage of life (young versus adult). Consult a nutritionist and follow manufacture directions (feed tag for example) if purchasing feed.

Dry Roughage

This includes hay and straw which are made or purchased as “bales”. Bales are commonly big and round or made small and square. Hay and straw bales are high in fiber but low in digestive nutrients. Dry roughage is required in large quantities to sustain animal life if that’s all they are fed. Since goats are ruminants, their stomachs are meant to break down this roughage. There are different types of hay that differ in their protein, carbohydrates, mineral and fiber content. As the name implies, this feed is made dry and should not contain any molds and should be dust free.

Forages

These are feeds which are given in the “green stage” and are not dry like dry roughage. Examples of these feeds would be silage (wrapped grasses for example) or green grass (pasture grazing). Corn can be made into silage and used for winter feed or used as a supplement when pasture throughout the summer is scarce. Grass silage is grass cut from fields and may contain some legumes and cereal type plants. A concern about silage is spoilage (the presence of mold which may be present due to holes in the silage wrap). Do not feed moldy, spoiled silage to any animals. Keep in mind, that pasture grazing is an economical approach for feeding livestock, but pastures must be managed well. Pastures can be very nutritious, palatable and carry most of the important nutrients essential for health and growth, but some plants eaten by goats could possibly give a foul flavor in goats milk.

3.4 IMPORTANCE OF ROUGHAGE AND FORAGE FOR GOATS

A high fiber diet is best for a goat’s digestive system. Therefore, farmers often feed goats dry roughage and forage such as hay and pasture. It is important to have good quality hay for your goats and you should be able to recognize what quality it is when you are purchasing. The four main techniques to determine the quality of hay are:

1. Appearance

- Nice and green?
- How long ago was the hay cut?
- Does it have a good mixture of grass and legumes?
- Does it have some weeds?
- Mold in bales?

2. Odor

- Good quality hay should have a fresh smell, like fresh cut grass.

3. Feel

- Does it feel soft and light?

4. Forage Analysis

- Hay can be tested for nutrient content. Contact your nearest New Brunswick Department of Agriculture, Aquaculture and Fisheries office for more information.

3.5 FEEDING PROGRAM

Goats should have access to the following items to ensure they are at their healthiest:

- Clean water
- High quality hay
- A mineral salt lick or a source of minerals
- Grain supplements to complete their diet if needed

However, to confirm your goats are getting a well-balanced diet, consider talking to a nutritionist or someone who has experience with goats that you trust.

3.6 BODY CONDITION SCORE

Throughout a goat's lifetime, their requirements for nutrition will fluctuate depending on where they are in their life cycle, quality of pasture or whether they are breeding. Doing a routine exam for body condition is important to ensure they are in good health and adjust their diet if needed. Does should be examined in the fall, mid gestation/pregnancy and prior to kidding.

Steps for Body Condition Scoring



1. Feel the spine in the center of the goat's back, behind the last rib and in front of hips.

2. Feel the tips of the transverse process, which are small projections off the right and left side of the spine (or each vertebra of the backbone).
3. Feel for fullness and fat cover.

Scores

Score of 1- Extremely Lean/Emaciated:



- Able to feel the individual vertebrae along spine easily
- No muscle or fat covering bones
- Consider getting a veterinarian in to look for any serious health issues and talk to a nutritionist to make sure goats are getting proper nutrition

BCS 1**		Lumbar spine	Ribs	Sternum	
Emaciated		<p>Top of spine: clearly visible, can easily be pinched. Deep depression between each vertebra.</p> <p>Short ribs: form a continuous shelf that fingers can grasp. Deep depression between each.</p> <p>Transition: no fat and little muscle is felt between the top of the spine and short ribs.</p>	<p>Ribs: Clearly visible. Fingers easily penetrate space between ribs.</p>	<p>Cartilage: easily felt</p> <p>Fat pad: can easily be grasped between thumb and forefinger and moved side to side.</p>	

- This animal is unfit for transportation unless under the advice of a veterinarian

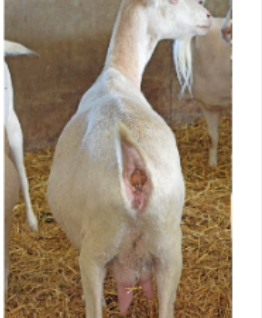

Score of 2- Lean:

- Bones can be felt, rounded slightly and not sharp
- Some muscle covering the bones
- If a doe is in this score before breeding or kidding, nutritional intake needs to be increased so she can reach a score of 3

BCS 2		Lumbar spine	Ribs	Sternum	
Thin		<p>Top of spine: visible, some muscle can be felt between skin and bone.</p> <p>Short ribs: form a shelf that fingers can grasp.</p> <p>Transition: deep depression from the top of the spine to the short ribs.</p>	<p>Ribs: some can be seen. Fingers easily penetrate space between ribs.</p>	<p>Cartilage: not easily felt.</p> <p>Fat pad: can be grasped and moved slightly from side to side.</p>	

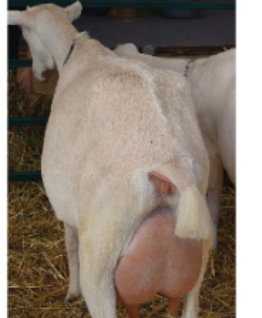

Score of 3- Good Condition:

- With applying firm pressure, you can only feel the ends of the transverse processes of vertebrae
- Full muscle with some fat covering bones, bones are harder to feel

BCS 3		Lumbar spine	Ribs	Sternum	
Ideal		<p>Top of spine: not prominent, slight hollow between vertebrae. Cannot easily be grasped.</p> <p>Short ribs: shelf is slightly noticeable, cannot be grasped.</p> <p>Transition: smooth slope from top of the spine to short ribs.</p>	<p>Ribs: difficult to see. Space between ribs felt with pressure.</p>	<p>Cartilage: barely felt.</p> <p>Fat pad: wide and thick. It can be grasped, but has very little movement.</p>	

Score of 4- Fat/Overweight


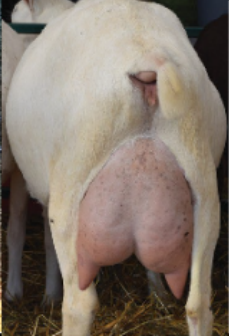
- Not possible to feel ends of bones as well
- Thick covering of fat over muscles and vertebrae

BCS 4		Lumbar spine	Ribs	Sternum	
Overweight		<p>Top of spine: cannot be seen. No indent between vertebrae. Top of spine is flat and cannot be grasped.</p> <p>Short ribs: no ridge or shelf present.</p> <p>Transition: rounded from the top of the spine to the short ribs.</p>	<p>Ribs: cannot be seen. Side of the animal is flat in appearance. Space between ribs only felt with strong pressure.</p>	<p>Cartilage: cannot be felt.</p> <p>Fat pad: difficult to grasp, cannot be moved side to side.</p>	

Score of 5- Obese

- Thick layer of fat over rump
- Tips of spine cannot be felt underneath fat,
- Health problems should be taken into consideration if goats are in this position, exercise should be increased and adjust nutritional intake

Obese

BCS 5	Lumbar spine	Ribs	Sternum	
	<p>Top of spine: buried in fat, slight indent surrounded by bulging fat. Rump looks like the top of a heart. Individual vertebrae cannot be felt.</p> <p>Short ribs: individual vertebrae cannot be felt.</p> <p>Transition: fat bulges out from the top of the spine to the short ribs.</p>	<p>Ribs: not visible. Space between ribs cannot be felt.</p>	<p>Cartilage: cannot be felt</p> <p>Fat pad: cannot be grasped or moved.</p>	

Ideal body condition (acceptable range):

For most stages of production: **3.0** (2.5-4.0)

At kidding or before winter: **3.5** (3.0-3.5)

Does at breeding: **3.0** (2.5-3.5)

Bucks at breeding: **3.0** (3.0-3.5)

Does may lose up to one point during peak lactation, but should be allowed to regain this before kidding.

Handling and Behaviour

KEY POINTS

- Key to handling goats is to understand their behavior.
- Goats are intelligent and need to be handled properly to optimize production, as well as animal and handler welfare.
- Vision, point of balance and flight zone are important to consider when handling a goat.
- Goats have a hierarchical or mob structure. Guiding the leaders in the mob will encourage the rest to follow.
- Instead of rushing, you should move the herd as fast as the slowest goats, which will allow them to be more comfortable with the situation.

4.1 NORMAL BEHAVIOUR

To properly handle goats, it is essential to have a good understanding of their behavior. They are curious and very social animals and shouldn't be kept in isolation for a long period of time. A herd of goats will form a hierarchy based on the most aggressive animal, which would be the dominant animal in the herd. Dominance within the group can also be determined by age, body, and horn size.

4.2 GOAT HANDLING AND RESTRAINT

Goats will need to be handled for breeding, movement, veterinary care, shipping, milking, and other related activities. When a goat is handled frequently, they will become familiar with the handling routine, making it less stressful for both handler and the animal. While handling, work calmly and consistently. Keep in mind that a goat that is harness or collar trained is easier to handle.

To catch them, use a hand under the lower jaw, lifting chin gently but firmly and the other hand around their hindquarters. It's important to put your hand under the lower jaw and not around their neck, especially with bigger breeds because they could easily drag you around the pen. To make them move forward, lift the tail, and let the head down a little. An alternative technique would be to put one hand

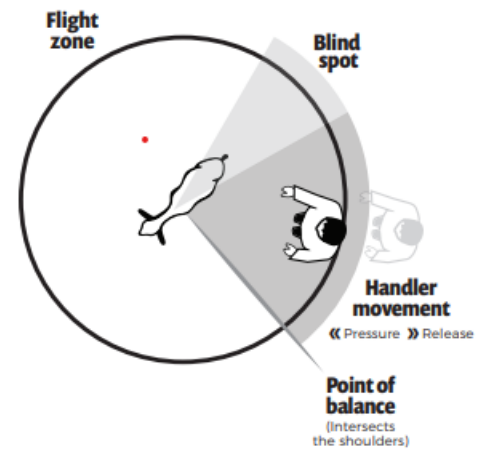
under the chin and with the other hand, holding their hindquarters gently push the animal forward. Positioning a goat against the side of the pen by using your knees, one behind the shoulder and the other in the flank or side of the hindquarters, can also be used to restrain the animal. For certain procedures like aging, giving oral treatments and checking the eyes, you can place the goat with its rear in a corner to prevent them from backing up.

It's important to never pick up a goat by its horn, neck, or legs. When moving a herd, encourage them to walk by standing in their flight zone, just off to the side of their hindquarters. Do not use sticks or canes to prod the animal, nor should you scare them by creating loud sounds.

4.3 FLIGHT ZONE

The flight zone is the imaginary area surrounding an animal that they consider their safe space. If you step into the flight zone, the animal might become alarmed and try to escape.

Understanding an animal's flight zone and predicting their response to a potential threat will make handling goats less stressful. The flight zone of an animal that is tame compared to an animal that is not can vary.



4.4 STRESS

Identifying signs of stress in goats is important. You need to identify the stressor and correct it.

Some *symptoms* of stress include:

- Being off feed and/or not drinking
- Tail down
- Droopy ears and eyes
- Isolation from other goats
- Diarrhea

Stressors can include:

- Overcrowding
- Extreme temperature
- No protection from wind and rain
- Not enough exercise
- Boredom
- Too much noise
- Transportation

Reproduction Management

KEY POINTS

- It is important to be able to recognize a normal kidding compared to an abnormal kidding.
- Develop a breeding schedule that works best for your setup.
- Recognize the signs of heat in does

5.1 BREEDING

A buckling and doeling can potentially start to breed at three months of age and should be separated until they are older to prevent accidental breedings. It is best to wait until a buckling is at least 6 months old before used for breeding. A general rule of thumb for a doeling is to wait until they are one year old.

Generally, goats are seasonal breeders, ranging from mid-August to March. This can vary depending on what breed you have, so it is important to research this information before attempting breeding.

Goats, like other animals, can be manipulated to breed out of season by using various hormone treatments. A breeding schedule should be developed by each farm individually after considering what works best for you.

A doe comes in heat approximately every 21 days from mid-August to March, known as the “estrous or heat” cycle. However, there is only a short window where she is “in heat”, which normally ranges from 18 to 24 hours. It is important to recognize the signs of “heat” in does as this short window is the only opportunity for breeding. Main signs of heat in does include tail wagging, mucous discharge, swollen vulva, bleating and mounting.

Breeding can be done with a buck or by artificial insemination. Both options have advantages and disadvantages, and this is something each farm must decide on their own, based on experience with conception rates, cost, timing, etc.

5.2 GESTATION/PREGNANCY

Gestation is the length of time from conception to kidding, which is on average 150 days for goats. Young does normally have one or two kids. Older does could have twins or triplets.

5.3 KIDDING

Some main signs that appear a few days before kidding consist of the udder filling up with milk, the doe's vulva is pink and swollen, the doe may seem lethargic and make sounds in between chewing her cud.

When suspecting she is close to kidding, isolate her in her own clean, dry pen and provide shelter.

When she is close to kidding, the doe might become restless, make small noises, or lie down and get back up frequently.

Once a doe is in labor, she will push out a thin water filled birth sac. After the sac is pushed out, the kid's front feet should appear with a small nose resting between two legs if it is a normal delivering. The kid will continue to come out after some harder pushing.

After a few hard pushes, the kid should be completely out. In some kiddings, the sac may have to be broken open over the kid's nose to prevent suffocation and or the umbilical or navel cord may need to be clamped then cut at a distance of approximately 1.5 inches or 4 cms from the kid with sharp, clean scissors. A general rule of thumb is to dip the umbilical or navel cord in iodine or chlorohexidine after birth and immediately after cutting. This is to prevent bacteria from entering the kid's body and blood stream through the umbilical or navel cord.

5.4 KIDDING COMPLICATIONS

If your goat is in labor, you should suspect problems if:

- Doe does not produce a kid after 20 minutes of hard pushing
- Water sack breaks but no kid appears after several pushes
- Doe is in an abnormal amount of pain
- There is an abnormal discharge (lots of blood for example)

If you suspect a problem, contact a veterinarian or someone that has experience with goats as soon as possible. Most kidding problems can be solved if you catch them early enough.

Goat Health and Well-Being

KEY POINTS

- Biosecurity is key to healthy animals and a successful farm.
- Talk to your veterinarian about biosecurity and what vaccines suit your herd best.
- It is important to spend time with your goats, so you know the difference between a healthy and unhealthy goat.

6.1 RECOGNIZING A HEALTHY GOAT

Spending time with you goats each day and knowing their normal behaviors will help with detecting any signs of sickness in your goats. Main signs of a goat not feeling well are loss of appetite, breathing heavy, lethargic, runny or abnormal manure, discharge from eyes and nose and milk production may be down. If any signs of sickness appear, check other goats and animals on farm and if no improvement is made during that time or other symptoms start appearing, it is important to contact your veterinarian as soon as possible.

It is very important to establish a veterinarian-client-patient relationship (VCPR) as animals cannot be diagnosed or treated by a veterinarian without a valid VCPR as per by-laws made by the New Brunswick Veterinary Medical Association (NBVMA). Veterinarians must be licensed by the NBVMA and follow by-laws in order to practice veterinary medicine in the province. A VCPR will allow you to access veterinary care, including emergency visits and medications for your farm. Visit <https://nbvma-amvnb.ca/> to locate a veterinarian in your area.

6.2 BIOSECURITY

When raising animals, it is important to practice adequate biosecurity because disease outbreak could be serious for your goat's health. Biosecurity represents management practices that your farm has developed to reduce encounters with diseases. With biosecurity, the main goal is to eliminate diseases from entering your farm.

The three main health threats to a farm where diseases can enter are mainly from visitors, animals (new or sick and wildlife) and from equipment or supplies.

There are several steps a person can take to prevent diseases on farms:

- *Isolation*: Isolate sick animals from healthy animals, eliminate contact between newly purchased animals and those already existing on farm (use a quarantine area, as mentioned in section 2.4). Handle isolated animals last when doing barn chores. Have designated equipment (water bowls, feed dishes, forks etc.) for animals in isolation.
- *Handling practices*: Handle sick animals last to prevent contamination amongst other animals.
- *Traffic control*: Visitors should wear clean clothes and footwear or wear dedicated barn clothes and boots which you provide on farm. Be aware of vehicles who have been to other farms.
- *Cleaning*: Sanitize equipment which has been in contact with other animals, remove hair and feces, keep animal pens clean, dry and free of ammonia (urine) smell.
- *Hygiene*: Wash hands, clothes, and footwear after visiting other farms. Use gloves when handling sick animals.
- *Control pests*: Control rodents on farm, keep feed in rodent proof containers as pests could spread diseases to your animals.

6.3 COMMON GOAT DISEASES SEEN IN NEW BRUNSWICK

Caseous Lymphadenitis (CL)

Cause: Bacterial infection caused by contact with *Corynebacterium pseudotuberculosis*. This disease is contagious to other goats if external abscesses rupture and contact occurs with the pussy discharge.

Symptoms: If lesions are internal, symptoms could include:

- Weight loss
- Nasal discharge
- Abnormal breathing
- Fever
- Weakness
- Increased lung sounds

If lesions are external, they may also experience some of the internal symptoms but there will be a visible abscess or multiple abscesses on the outer body of the goat.

Treatment:

- No effective antibiotic treatment because the animal encapsulates (walls off) the bacteria within tissue making it hard for antibiotics to reach the infection.
- Affected animals need to be isolated from the rest of the herd until the abscess has drained and scabbed over.
- Abscesses can be cut open and flushed daily but watch for contamination of the area with the bacteria.
- Surgery to remove the tissue involved (abscessed lymph node) may be considered but there are risks.
- If needed, culling the animal is sometimes the safest and most effective option.

Prevention:

- Vaccinating your herd against CLA may be possible and should be discussed with a veterinarian.



Caprine Arthritis Encephalitis (CAE)

Cause: A virus found in the milk and colostrum of does who have been exposed to the virus.

Symptoms:

- Kids experiencing paralysis or inability to walk
- Adults have swollen joints, hard udders, difficulty breathing and may be lame.

Treatment: There is no specific treatment known for CAE. Keep your goat comfortable by using extra bedding, frequent foot trimming and medication such as anti-inflammatories when needed.

Prevention:

- Feed kids colostrum from a doe that tests negative for CAE, pasteurize milk
- Test does for CAE before breeding or purchasing.

Orf Virus (Sore Mouth)

Cause: Contact with virus through pimples or scabs.

Symptoms:

- Small pimples that turn into scabs or blisters. Found in corner of mouth, lips, or gums.

Treatment:

- Since it is primarily a viral infection, there is no treatment but there are precautions that can be taken.
- Rub iodine into lesions after scabs are removed to dry out lesions thus reducing infection.
- Sanitary precautions, such as extra cleaning of water and feed dishes, to prevent further spread.
- Goats become resistant to infection after they recover.

Prevention:

- Difficult to prevent.
- Wash hands thoroughly after handling goats with sores since it can be transmitted to humans. Wear gloves when treating sores.



White Muscle Disease

Cause: A deficiency of Vitamin E, selenium or both and is very common in animals in New Brunswick.

Symptoms:

- Kids are born weak or dead
- Healthy kids suddenly become weak and die
- Digestive problems in young kids
- Respiratory problems in young kids

Prevention:

- Vitamin E – Selenium injections should be given to pregnant does at three to four weeks before kidding.
- Inject newborn kids with vitamin E – Selenium when they are one or two days old.
- Consult a veterinarian.

Johne's Disease

Cause: A bacteria called *Mycobacterium paratuberculosis* infecting young goats before they are seven to eight months old. The infection affects the intestinal tract, which interferes with the animal's ability to absorb nutrients. Young kids pick up the bacteria from an adult who is shedding bacteria in their manure.

Symptoms:

- Seen in animals three to five years old; older animals may show signs as well.
- Weight loss, poor body condition or hard to maintain weight
- Diarrhea may develop a few days before death

Treatment:

- Diagnosis can be made by a blood sample or fecal culture but since the disease is fatal, there is no cure.

Prevention:

- Purchase new or replacement animals from disease-free herds
- Isolation of young stock from mature one
- Good sanitation

Pneumonia

Cause: Normally caused by various bacteria and can worsen with stress, poor ventilation, or overcrowding.

Symptoms:

- Weakness
- Coughing
- Fever
- Difficulty breathing
- Loss of appetite
- Dry nose

Treatment:

- Antibiotics
- Ensure they are eating and drinking
- Separate them from herd

Prevention:

- Good ventilation
- Reduce dust
- Right amount of space
- Good nutrition
- Reduce stress

Parasites

Cause: Poor nutrition, poor management, environment, lack of space and goat behaviour (goats graze very close to the ground) can all contribute to parasites. Parasites can be both internal and external.

Symptoms (general):

- Weight loss
- Diarrhea
- Rough hair coat
- Lethargic and weak
- Gums and eyes become white
- Fever
- Abnormal breathing
- Swelling under the lower jaw

Treatment:

- Isolate infected goat
- Clean their pen
- Take fecal samples to identify parasites and deworm goats with appropriate product

Prevention:

- Stop pasturing goats in damp areas
- Avoid pasture when dew is present
- Rotate pastures
- Ensure cleanliness
- Provide good nutrition
- Deworm with appropriate product, noting weight of animal
- Discuss with a veterinarian, make a schedule or plan
- Take fecal samples

6.4 VACCINATIONS

Vaccinating your herd can help prevent the threat of some diseases. It is important to talk to your veterinarian about a vaccination program suitable for your herd.

Deworming is not a vaccine, but it is essential for the wellness of your goats to protect against parasites. When contacting your veterinarian about a vaccination schedule, discuss a deworming schedule suitable for your herd as well.

6.5 EUTHANASIA AND DISPOSAL

Deciding when to euthanize is not an easy decision but it is important to know when to decide to ensure an animal does not experience further suffering. If you think your animal needs to be euthanized, contact your veterinarian to discuss if euthanasia is necessary.

Planning for the future. In the event a veterinarian can not come out to the farm to euthanize, do you have a plan in place? Do you have the resources, skills, and knowledge to perform a euthanasia properly? Have this important discussion with a veterinarian and make a plan that you and the veterinarian are both comfortable with. Euthanasia should be quick and not cause further pain for the animal.

It is important to dispose of your animals after euthanasia for proper farm management and disease prevention. Before disposing, check the regulations in your province, since they can vary depending on the province. The New Brunswick Department of Agriculture, Aquaculture and Fisheries website provides guidelines on carcass disposal at

<https://www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Agriculture/Livestock-Betail/CarcassDisposalGuidelines.pdf>

Transport

KEY POINTS

- Goats may need to be transported when bought, sold, being bred or slaughtered.
- To reduce stress and risk of injury, it is better to have a plan when transporting animals.
- Everyone taking part in the transportation is responsible for the care and welfare of the goats.
- Recognize the signs of a distressed animal during transportation and provide care as soon as possible.
- Adjust transportation during extreme weather.

7.1 TRANSPORTATION EQUIPMENT

- Vehicles/trailers used for transporting animals must be in good condition and adhere to the provincial highway traffic legislation.
- The vehicles/trailers must have secure, strong, and high enough sides to prevent animals from jumping, falling off or being pushed from the vehicle. The doors should be equipped with a livestock-proof locking system and wide enough to prevent injuries when loading.
- Goats should only be loaded into a clean and disinfected vehicle/trailer to avoid the spread of disease.

7.2 TRANSPORTING TIPS

- Only healthy goats that are in good physical condition should be loaded onto a vehicle/trailer to be transported. It is important to evaluate the health and fitness of the goats prior to transport. There are three categories to consider when evaluating goats for transport: fit (goats in good health and no underlying diseases); unfit (signs of illness, injury, poor body condition); and compromised (inability to stand while in transit). Goats who are unfit or compromised can only be moved to a facility where treatment will occur. These animals will require veterinarian oversight.
- If a goat is showing signs of distress during transport, it should receive proper care and attention, including being taken to the nearest suitable facility.
- In cases of a road emergency, immediate action should be taken to minimize animal suffering.

- Transporting a doe 2 weeks prior to, and after kidding should be avoided.
- Under the federal *Health of Animal Regulations*, animals can't be confined in a transport for longer than 48 hours without being offered food and water. Rest periods should be planned prior to departure and should not exceed 24 hours.
- Provide bedding for the floor of the vehicle/trailer prior to loading the animal. This will provide absorption and prevent slipping.
- Proper ventilation must be provided. Weather conditions should be monitored, and ventilation adjusted, if needed.
- Do not transport a goat in the trunk of a car.

7.3 SIGNS OF ANIMAL DISCOMFORT DURING TRANSPORT

Identifying warning signs of an animal in discomfort during transport is essential so you can make changes and help your animal feel better about transportation. Some helpful tips are:

- An overcrowded load: In this situation the load won't "settle" and continues to scramble or shift and make noise for long periods of time. Animals have increased risk of injury. Consider reducing the load density.
- An overheated load: All animals will pant to cool themselves down since they cannot sweat like humans do. Consider reducing the load density and plan your rest periods according to the temperature.
- A load exposed to extreme cold: Animals may try to crowd one another causing injury.

7.4 TRANSPORTATION DURING EXTREME WEATHER

During hot and humid weather:

- Adequate air flow must circulate in the vehicle/trailer to keep the goats comfortable.
- Rest periods should be minimized in time and the vehicle/trailer shouldn't be parked in direct sunlight.
- Loading density should be reduced.
- Try to reduce stress as much as possible, especially during handling.
- Consider travelling early in the morning or in the evening when its colder.
- During the hottest part of the day, the vehicle should be in constant movement to let air circulate through the vehicle/trailer. Plan the rest period to be during cooler times, such as early morning or late evening.

During cold weather:

- Protect your animals from frostbite and prevent loss of body heat.
- Openings should be covered to protect goats from cold draughts.
- Additional measures should be taken to keep the goats are dry and comfortable, such as providing extra bedding.
- Protect them from direct contact with the vehicle's/trailer's cold metal surface.
- Ensure that ventilation is still adequate.

General Resources for Goats:

- The Code of Practice for the Care and Handling of Goats (found at the National Farmed Animal Care Council website)
- The Ontario Ministry of Agriculture, Food and Rural Affairs has good information on nutrition, goat management and business.
- Connect with your veterinarian for information.