

Section 2

HOUSING

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What are the basics?

- Housing needs vary depending on climate, lambing season and individual preferences.
- Facilities should be located on elevated, well-drained sites.
- Location of facilities may be dictated by provincial nutrient management regulation requirements.
- The site should allow for installation of water, electricity and natural gas, and should be easily accessible for deliveries and manure handling.
- The facility is not required to be warm, but there must be adequate ventilation to provide fresh air and a dry environment at the level of the sheep.
- Sheep can thrive if they are provided with a draft-free place – out of cold, wet and wind.
- Shade is recommended for sheep being raised outdoors during summer.
- Some method of fly control will be necessary during confinement situations in summer and fall.
- A pole shed, open to the south, may be adequate protection in winter.
- When lambing in winter, a section of the building that can be partially heated or enclosed so that the temperature remains near or above freezing is essential to the livelihood of newborn lambs.
- Insulation of ceilings of single-story buildings may be necessary to avoid condensation dripping on animals if inadequate air movement cannot prevent condensation on the underside of the roof or where temperature extremes are an issue.



Location of facilities may be dictated by provincial nutrient management regulation requirements.

How much space do I need?

- Space allowances will vary depending on animal size, fleece length, climate, soil characteristics and production practices. Guidelines are set out in the Code of Practice (<http://nfacc.ca/pdf/english/Sheep1995.pdf>) and in some provincial livestock building standards. Visit the Canadian Farm Building Code (http://www.nationalcodes.ca/nfbc/index_e.shtml).
- Sufficient space is required for all animals to lie down, move around and find shelter without touching each other if they choose; there is a need for them to be able to respect their social hierarchy.
- Shearing in advance of housing allows stocking rates in the barn to increase by up to 20%.
- Depending on the type of production group, the number of animals per pen should be limited. Consider the ability of an observer to find sheep that are sick/dead/lambing and the risk of young lambs being separated from dams.
- Ewes require 10-20 square feet depending on stage of production (see Codes of Practice – <http://www.nfacc.ca/pdf/english/Sheep1995.pdf>).
- Claiming pens require a minimum of 16 square feet and up to 25 square feet for larger ewes. Ewes with more lambs need more space.
- Feeder lambs require 8-10 square feet.



Ewes require 10-20 square feet depending on stage of production.

- Situate ram pens so they can see and hear farm activity when not housed with ewes.
- Feeder space must be elevated when housing inside.
- Less interior space is required if sheep are raised on slotted floors or if they have access to an exercise area/pasture.
- In general, longer narrower pens allow better access to fence line feeders and maximize the number of sheep per pen in comparison to square-shaped pens.
- Feeder space for every animal is critical so that all sheep can eat at one time if 'limit feeding' to avoid over-feeding the aggressive eaters and under-feeding others.
- Suggested feed rack space is as follows:
 - Ewes and rams – 16 inches for group feeding; 6 inches for self feeding
 - Feeder lambs – 12 inches for group feeding; 4 inches for self feeding
 - Height to throat for ewes and rams – 12 inches
 - Height to throat for lambs – 10 inches

What is total confinement and why consider it?

- The major difference between an extensive production system versus a confinement situation is that sheep are fed mechanically harvested feed and there is limited or no grazing.
- Total confinement enables a producer to raise sheep or increase flock size in situations where land is a limiting factor due to availability or cost.
- In some provinces, nutrition management policy will dictate how manure is handled. Consult your provincial agricultural ministry for more details.
- Feeding programs in confinement situations can be fine-tuned and adapted to animal type and production phase more easily than when livestock is selectively grazing.
- Confinement requires intensive, year-round management but also allows for intensive, year-round management (i.e. doing what is required when it is required is much easier in a total confinement situation in contrast to having to round up the flock from a pasture, confine and then treat).
- Confinement tends to have a higher cost of production, hence higher levels of performance are usually required to be profitable.
- Advantages to confinement:
 - Lower land base requirements and allows for larger flock size on set land base.
 - Predator problems can be eliminated.
 - Internal parasite problems are greatly reduced, and it is easier to control foot rot and foot scald.
 - Tends to be easier to accelerate the lambing cycles in a total or semi-confined system.
 - Lends itself well to automated feeding. It is common to fatten (feed) lambs in confinement.
- Excellent ventilation is an essential requirement in total confinement situations in barns. The total system should be designed by a ventilation specialist familiar with the species to ensure the environment remains healthy for the sheep and the manager.

How much lighting is required?

- It is necessary to meet human light requirements.
- There should be at least some ability for adequate artificial lighting in cases of emergency, night checks, feeding, shearing, etc.
- Where natural lighting is not adequate, artificial lighting should be used so there are no dark corners or excessive shadows. Shadows startle sheep and make moving sheep more difficult. Sheep will move more easily from a dark area to a light area. See “How do I handle my flock?” for more information on sheep behaviour and considerations for housing.
- Light and dark periods should be at least six hours each per 24-hour day.

What are the watering requirements?

- Water requirements for sheep vary with stage of production, air temperature, and moisture content of feed.
- Water can come from various sources such as ponds, streams, dugouts, pressurized farm well systems, cisterns, and pressurized urban systems, etc. or water holding/ drinking systems – e.g. waterers, bowls, tanks, etc.
- Ponds/dugouts are not a recommended water source, but if these are used, watch for build-up of blue-green algae or other contaminants – they can be potentially fatal to livestock and humans.
- If possible, be environmentally responsible and pump water out of ponds for the sheep rather than allowing livestock access to the pond.
- Automatic watering systems should be provided, where possible. Sheep actually prefer running water and such designs are available. The added advantage is that less energy is required to keep moving water from freezing.
- Provide at least 4.5 litres of water each day per sheep – keep in mind pregnant and lactating ewes need more.
- In confinement situations, where water bowls or nipple drinkers are used, allow one bowl or nipple per 10 rams, or 40-50 ewes, or 40 ewes with lambs, or 50-75 feeder lambs. Nipple systems can allow sheep to waste water and surrounding areas can become wet. In cold climates, nipples can freeze and/or reduce water intake.
- Approximately 40 ewes, 10 rams or 50-75 feeders can use one watering bowl.
- Recommended water surface area in troughs is 0.1 m² per 40 head of ewes, rams and feeder lambs.
- Water receptacles should be designed and installed to be readily accessible to young lambs and, depending on the size of the vessel, protective bars should be used to avoid likelihood of young lambs drowning.
- Protection from freezing winds reduces winter heating costs for waterers.
- Frost-free cattle water systems may freeze in colder climates where small numbers of sheep use less water than is required to keep the water flowing.
- Consider heated automatic bowls, waterers and insulated/heated pipes in cold barns. Heated waterers and water delivery systems are essential in colder winter climates.



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- Check bowls daily and clean when needed.
- Water intake can double when air temperature exceeds 25°C because of evaporative cooling.

Can I outwinter my sheep?

- Sheep can be raised outdoors but they will have to put more energy resources towards maintaining body temperature and therefore have greater nutritional requirements.
- Sheep kept outside benefit from better ventilation and more exercise; however, they will need shelter from wind and ice-rain or winter rainstorms.
- Sheep need access to windbreaks during storms – e.g. a tree line, the downwind side of a hill, a row of round bales, the side of a building, etc.
- If shorn during below freezing temperatures – or if storm hits immediately following shearing – then sheep must be provided shelter.
- A temporary shelter could be a barn, hay shed, machine shed or garage.
- Severely cold temperature puts newborn lambs at risk of being frozen prior to having a chance to nurse.
- Cold temperatures are not a problem once lamb has colostrums and has dried off, but conditions must be such that lambs don't pile up in an attempt to stay warm causing crushing deaths of those on the bottom – they need adequate bedding.
- Two situations that will require the flock to be housed temporarily during the winter months:
 - 1) the first 10 days after shearing (after 10 days a ewe's metabolism has adjusted and given adequate food will be okay without shelter)
 - 2) lambing during winter months
- Winter grazing can result in considerable feed savings, however, there is a need to ensure sheep have access to enough forage and be kept out of mud and standing water during wet fall or winter melt periods.
- Stockpiled pasture can be used for winter grazing.
- Stockpiling is the practice of saving certain hay or pasture fields for grazing in the fall and winter, after forage growth has stopped. Stockpiled pasture is also referred to as fall-saved pasture or deferred grazing and is one of several extended grazing techniques.
- The most important management factor in determining how much forage will be available for fall grazing is the 'summer resting date.' This is the date in the summer when the animals are removed from the pasture so that it can re-grow and be stockpiled for use in the fall and winter.
- Any grass can be used for stockpiling, however, some species are better suited to certain systems.
- The growth habit of the plant should be considered when deciding what type of management to use. Grasses that do not form a true stem in the regrowth, such as orchard and meadow brome, tend to lodge and shade themselves out when excessive regrowth occurs. Shorter rest periods are best for these species.
- Grasses that form a stem in the regrowth and are more upright in their growth habit, such as tall fescue, reed canary and smooth brome, will stand up better in wet fall weather or after snow. Where long regrowth periods are desired, the upright species should be used.



Two situations that will require the flock to be housed temporarily during the winter months:

- 1) ***the first 10 days after shearing (after 10 days a ewe's metabolism has adjusted and given adequate food will be okay without shelter)***
- 2) ***lambing during winter months***

- Select fields with firm soil conditions and a good accumulation of forage growth.
- Animals should be given access to only part of the pasture area at a time so that they consume most of the available forage, rather than picking out only the best.
- Fields that are stockpile grazed will be slightly slower to become productive in the spring. The savings gained by not having to harvest and store the forage will more than offset this loss of early spring growth.
- Sheep can graze through approximately 12 inches of snow as long as it is not hard.
- If the snow is not hard or crusted, the sheep can usually eat enough snow to meet their water requirements; otherwise they need to be watered at least once per day. It is not recommended that lactating ewes or young growing lambs rely on snow as their only source of water.
- During periods of high-production demands, i.e. lactation/growth, animals may not be able to eat enough to supply their needs, so production and body condition may suffer.

What facilities are required for lambing?

- An area that remains at or just above freezing is a must if lambing in winter.
- Lambs are very vulnerable in wet and drafty conditions – the surface area of their body allows for rapid chilling when they are newborn and wet.
- Lamb survival is higher when shed lambing is practiced.
- Claiming pens can be used to isolate the ewe and her lambs in a small area separate from other ewes and lambs. In the claiming pen, the ewe learns which lambs are hers. Ideally, claiming pens provide a safe, stress-free environment where ewes and lambs can easily be monitored. This is particularly important for ewes lambing for the first time. A good rule of thumb is to have enough claims for +/- 10% of the group lambing.
- Lambing or drop areas (where ewes give birth) should be designed to allow the ewe to move away from the large group of pregnant ewes. Being able to move off on her own increases mothering, reduces lamb stealing by other ewes and in the process increases lamb survival rate.
- Lambing drop areas keep the fluids associated with birthing out of the claiming pens which, in turn, keep the claiming pens drier.
- A large 'drop area' can have pen dividers of bales, or small panels secured to one wall to allow the privacy that ewes seek out just prior to lambing. Be sure any dividers/bales used are secure; ewe activity can knock bales/dividers onto newborn lambs, crushing them. The ewe will remain with her own lambs. A board along the entrance to the lambing areas will allow the ewe to move in and out, but will keep the new lambs inside.
- A drop pen is also where ewes can be observed while lambing. Once lambing is complete the ewe and lambs are moved to claiming pens.
- Have claiming pens situated so that ewes with newborn lambs can easily be moved from the drop area to the claiming pen area. A long drop area with claiming pens along one side allows easy entry from one side. If the building plan allows, the ewe and her lambs can be released into a group pen of ewes and lambs on the other side.
- Moving ewes and lambs from the claiming pen to a small group pen, or hardening pen, allows the lambs a chance to get to know who their mother is.



Lamb survival is higher when shed lambing is practiced.

- Plan the lambing facility and portable penning to accommodate constantly changing group sizes. By gradually moving the divider along the pen as the ewes lamb, the dimensions of pens can be adjusted.
- Adequate labour is needed for 24-hour supervision during lambing, particularly in colder climate winter lambing.
- More elaborate housing is generally required if lambing occurs during periods of inclement weather.
- Natural shelters may be all that is needed if lambing occurs on pasture during periods of mild weather.

Why ventilate sheep housing and how do I do it properly?

- Ventilation is important for maintaining a healthy flock and critical for maintaining the health of lambs.
- Sheep, young ones in particular, are susceptible to respiratory diseases.
- The purpose of ventilation is to replace moist, warm air inside the barn with cool, dry air from the outside.
- Viruses and bacteria thrive in low-quality air, which can lead to respiratory diseases and all sorts of infectious diseases in lambs and adult animals.
- If housed in barns, air must be kept fresh and dry, especially at the level of the animals. Get down to lamb/sheep levels when you are checking air quality. If you can smell ammonia, you may have a problem. Gases are by-products of forage digestion, urine and feces that build up on a bedding pack. A flock can produce very humid conditions in an enclosed barn.
- During winter, it is essential to circulate enough fresh air to keep humidity down, while maintaining adequate warmth to prevent water lines from freezing and to protect lambs.
- Warm air will pick up more moisture than cold air, so excess humidity in enclosed winter lambing barns may require supplemental heating to keep the barn dry.
- Open-style barns are usually well-enough ventilated, but some of the larger ones require fan systems to get air circulating through all areas.
- For closed barns, opening windows away from the wind or installing chimneys will help solve the problem.
- Mechanical venting (e.g. fans) should vent into the prevailing winds to help reduce drafts in simple systems.
- Take care to prevent drafts directly onto animals during winter.
- Reducing stocking density, shearing animals and providing dry bedding will help avoid problems with humidity.
- Effective ventilation avoids high humidity, condensation, damaging ammonia levels and cold drafts.
- For more information on natural and mechanical ventilation systems for sheep barns, see: http://www.cansheep.ca/user/docs/pdf/ventilation_systems-jbpetersen.pdf.



Effective ventilation avoids high humidity, condensation, damaging ammonia levels and cold drafts.

How can I provide good flooring for my sheep?

- An ideal floor is typically either concrete or dirt.
- Earth floors are warmer, softer and more economical, but may be hard to maintain.
- Good drainage – both inside and around the outside of the barn – is needed to keep the floor dry.
- Floors must be well drained to keep bedding and sheep housing areas dry.
- It is necessary to meet provincial regulations to avoid run-off issues.
- It is more difficult to keep bedding dry on concrete floors as there is nowhere for the liquids to drain.
- Concrete floors are hard and unforgiving if your floor plan changes, but easy to maintain and sanitize.
- Plenty of clean, fresh bedding should be provided at all times – this is the most economical means of preventing health problems.
- Various materials can be used for bedding for sheep, depending upon their cost and availability. Straw, wood shavings, paper products, peat, hemp and leaves all work. Hay, sawdust, wood chips, pine shavings and sand can be used, but for different reasons are less than ideal.
- Sawdust is very fine and not ideal bedding for wool sheep because it gets into their fleeces, but it works fine for hair sheep.

How should I store feed?

- Keep grain dry – off the ground and protected from the elements – so as not to develop moulds.
- Protect grain from contamination by rodents, cats and birds.
- Protect hay from moisture and sunlight to help maintain nutrient quality and reduce waste.
- Label bins clearly to reduce feeding errors, particularly where you use hired or volunteer help.
- Purchased feeds, whole grains, by-product feeds, forages, straws, shavings, supplements and milk replacers must be stored in a secure location, ensuring that sheep and lambs do not have access to non-ruminant feed.
- Obtain a bill of sale, feed tag or certificate of verification from your feed supplier, ensuring that purchased feed does not contain any prohibited animal by-products. Feed that is not manufactured specifically for ruminants may contain prohibited animal by-products. Only purchase feed that is labelled in accordance to the Feed and Health of Animals Regulation.
- Do not store hazardous materials in or near feed or bedding storage areas.
- Properly maintain and clean farm equipment that may come in contact with feeds or be stored in the feed storage areas to prevent contamination of the feeds.
- Store all non-ruminant feed in a secure location(s).
- All non-ruminant feed storage areas are to be clearly labelled and separate from ruminant feed storage, including feed for dogs and other species.



Feeding and accommodation rules of thumb:

- **Hay: 5 lbs per head for an average sized (150-160 pound) ewe per day stored for winter (200 days)**
- **Bedding: 1-1.5 lbs per head per day for the housed period**
- **Grain: 1-2 lbs per head per day**
- **Water: 1 square foot of space per 40 head (continuous supply)**
- **Refer to the OFFS manual for more information**

- Ensure that all medicated feeds and medicated feed additives are received and stored in secure locations to avoid accidental consumption by your sheep.
- When storing medicated feeds, record the bin identification or number.
- Store your medicated and non-medicated feeds in separate locations to prevent contamination of the non-medicated feeds and ingredients.
- Clearly identify each feed bin with regards to its contents.

Where should manure be stored?

- Store away from buildings and corrals to prevent run-off into sheep housing areas, water sources and feed supplies.
- Check provincial legislation regarding handling, storage and field application of manure.
 - British Columbia (<http://www.gov.bc.ca/al/>)
 - Alberta (<http://www.agric.gov.ab.ca/app21/rtw/index.jsp>)
 - Saskatchewan (<http://www.agriculture.gov.sk.ca/>)
 - Manitoba (<http://www.gov.mb.ca/agriculture/>)
 - Ontario (<http://www.omafra.gov.on.ca>)
 - Quebec (<http://www.mapaq.gouv.qc.ca/fr/accueil>)
 - New Brunswick (<http://www.gnb.ca/0027/index-e.asp>)
 - Nova Scotia (<http://www.gov.ns.ca/agri/>)
 - PEI (<http://www.gov.pe.ca/af/>)
 - Newfoundland (<http://www.nr.gov.nl.ca/agric/>)

Where can I go for advice on constructing sheep housing?

- Your local agriculture department is a good source for agricultural construction.
- Canada Plan Service (CPS) is a nation-wide network of agricultural engineers and livestock specialists concerned with planning, design and construction of modern farm buildings.
 - CPS's goal is to gather ideas from across Canada and then develop construction and management recommendations.
 - Publications include detailed construction plans or management and construction leaflets.
 - Each province distributes the plans and leaflets according to its needs.
 - CPS information resource focuses on the following areas:

<ul style="list-style-type: none"> • Farm structures and their environments • Animal care and comfort • Rural environment 	<ul style="list-style-type: none"> • Crop handling, storage, processing and conditioning • Waste handling and storage • Systems engineering
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Visit Canada Plan Service:
www.cps.gov.on.ca

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