

Farm Resources, Facilities and Equipment

Adapted from 'Evaluating Farm Resources and Sheep Production Systems'
by Bill McCutcheon, Former OMAFRA Sheep Specialist
and 'Housing and Equipment' by Ian Alton, Former OSMA Director

Labour

Labour is an essential and important input in a sheep enterprise. If you are too busy to implement proper flock health and to monitor your sheep closely, the productivity and profitability of your flock will suffer. The amount of labour required will depend on your production system, the size of the flock, amount of cropping, degree of mechanization, facility design, and handling system. When evaluating labour requirements consider the distribution of activities on your farm throughout the year. For example, producers with accelerated lambing programs will generally have a higher, but steadier level of work through the year, while operations that lamb once per year will have increased labour during lambing. Producers who produce their own feed will have extra requirements during haying and cropping seasons.

The degree of mechanization generally needs to increase if labour requirements are to remain the same as the size of the flock increases. Such things as feeding with large round bales, using self-dispensing grain feeders, and using tractors to clean pens will greatly reduce time requirements, but must be weighed against extra overhead costs. Whatever your feeding and management systems, however, always consider ways of setting up your facilities to make your work easier. Never create extra work by having things in inaccessible locations, or by trying to work through the stock to reach feeders or other pens. The merits of a good handling system cannot be stressed enough for decreasing labour requirements and encouraging proper flock care.

Land

The amount of land you will need depends on whether you plan to produce winter feed for your flock and the level of confinement (i.e. grazing requirements) of the flock. The productivity of the land must also be evaluated to determine the carrying capacity (animals/acre) and the estimated yield from crop production. As this varies greatly throughout the province, it is advisable to contact an OMAFRA Sheep or Pasture Specialist to find out more about your area.

Many producers are under the impression that you must own land to be a farmer or raise sheep. In many cases, unless you already own the land, it is likely most economical to rent your land and buildings. The extra debt load imposed on the farming business by buying land may be enough to make the farm business unsuccessful. Unless you have an off-farm source of income to pay for the farm mortgage, renting may be the most viable alternative.

Machinery

What equipment do you need to operate a sheep enterprise? If you pasture your sheep you may need equipment to clip pastures for weed control and to spread fertilizer. Unless you are over-wintering your sheep on pasture, you will need to remove manure from the sheep barn and yards. The equipment needed for this could consist of a 40 to 65 h.p. tractor with a front end loader, a rotary mower, and perhaps a manure spreader. If you are going to be producing winter feed on-farm, baling and combining equipment will also be needed. It may be cheaper to buy your hay and grain than produce it yourself when you consider the cost of the equipment and labour required. If forage and grain are purchased off the farm, the shepherd has the opportunity to expand the flock by using more land for pasture. Hiring custom operators with their own equipment to crop your land may also be a viable alternative.

Housing

Sheep do not require elaborate housing. Although extra considerations must be made for young stock and during lambing, adult sheep do not require a warm barn and can thrive if they are provided with a draft free place to get out of the snow and wind. Remember that animals housed outdoors during winter will have to put energy resources towards maintaining body temperature and, therefore, will have greater nutritional requirements. During periods of high production demands such as lactation or growth, the animal may not be able to eat enough to supply these needs, so production and body condition will suffer. When housing outdoors during the summer, do not neglect to provide shade for animals. When housing indoors, space requirements including floor space and feeder space must be evaluated to determine how many sheep can be housed in a given pen.

The most important things to consider when assessing housing facilities are:

- Adequate floor space for the number of animals to be housed. Ewes require 10-20 square feet depending on the stage of production. (See The Code of Practice recommendations at the back of this binder)
- The ease of feeding, cleaning, and handling the flock
- Ventilation and drainage

Lambing Facilities

Lambs are born with little fat cover and a low energy reserve. Hypothermia is the main cause of lamb loss in Ontario and lambs that are exposed to cold, wet conditions are very vulnerable. Therefore, an insulated area is a must if you are lambing in the winter. Once lambs are dried off and have a good start, they are better able to handle lower temperatures.

Many producers will isolate ewes with newborn lambs into mothering pens for a day or two. The purpose of these pens is to allow the ewe to calmly accept her lamb in safe and stress free environment. This may be particularly important for ewes the first time that they lamb, as they are more likely to reject the lamb(s). As well, other ewes that are close to lambing themselves may attempt to 'steal' newborns. Pens should be clean, easily disinfected, draft free and constructed so that lambs cannot become chilled or trapped. They should be no less than 4' x 5' in floor size and at least 30" high.

Ventilation

Ventilating barns properly is an important and at times challenging aspect of maintaining a healthy flock. Viruses and bacteria thrive in low quality air and can cause respiratory diseases in animals. This is a particular problem for young stock, which are more prone to pneumonia resulting in poor growth and high mortality. When livestock are housed in barns the air should be kept clear of excess humidity and heavy odours. This is complicated by the fact that by-products of forage digestion are water and heat, and a flock of sheep can produce very humid conditions in a barn in a short period of time. The purpose of a ventilation system, therefore, is to replace the moist, warm air inside the barn with cool, dry air from outside. Providing adequate ventilation during the winter is a balance of circulating enough outside air to keep humidity down, while maintaining adequate warmth (e.g. prevent water lines from freezing, protect lambs, etc). Ventilation during the summer may be even more problematic if the outside humidity equals that within the barn.

Barns can be ventilated naturally or by forced air fans. Open style barns are usually well enough ventilated but some of the larger ones require more elaborate systems to get air circulating through all areas. For closed barns, opening windows away from the wind will help solve the problem, but take care to prevent drafts directly onto the animals during the winter. Reducing stocking density, shearing animals, and providing dry bedding will help avoid problems with humidity in both the summer and winter.

To learn about specific types of ventilation systems or if you are in doubt about the ventilation capacities of your barn, contact your provincial specialist to arrange a consultation.

Flooring

Floors are typically either earth or cement. Earth floors are warmer, softer, and more economical, but may be hard to maintain. Good drainage is needed to keep the floor dry. Concrete floors are very hard and unforgiving, but are easy to maintain and sanitize. Plenty of clean, fresh bedding should be provided at all times. If it isn't clean enough or bedded well enough for the shepherd to curl up on, then it isn't adequate for the flock either.

Penning

Ideally sheep should be divided into group pens according to nutritional requirements. This allows the shepherd to meet the nutritional needs of the animals as closely and economically as possible. Animals may be penned according to the following groups:

- open/dry ewes on maintenance diet
- rams
- ewes preparing for breeding (flushing)
- type of pregnancy (i.e. single or multiple pregnancy; if pregnancy testing performed)
- ewes with newborn lambs
- lactation demands (e.g. number of lambs, stage of lactation)
- market lambs based on age, weight, and/or finish
- replacement ewe and/or ram lambs (may feed differently than market lambs)

Feeding

Sheep should be fed in a manner that does not require the shepherd to enter the pen with the flock. Walk-through (feeder divides two pens, allowing producer to feed both pens) or bunk feeders accessible from alleys should be used. Adequate bunk space must be provided to allow all sheep to eat at the same time with some space left over. This allows smaller, more submissive animals to eat at the same rate as the rest of the flock. This helps maintain an ideal average body condition in the pen, and helps decrease the incidence of overeating disorder in feeder lambs.

There are various styles of feeders available. Feeders should be designed to keep sheep from walking on the feed and to prevent feed from being pulled onto the ground. This helps keep feed clean to minimize parasite loads and decrease feed wastage. Commercially produced feeders will last longest, but for economic reasons adequate feeders can be made from wood.

Feed Storage

Grain must be kept dry (i.e. off the ground and protected from the elements). Grain that gets wet is prone to developing moulds, which are potentially harmful to the sheep. Grain should also be protected from rodent infestation as much as possible. Protecting hay from moisture and sunlight helps to maintain nutrient quality and prevents wastage.

Watering

Where possible, automatic watering devices should be provided. In cold barns you may have to consider heated automatic bowls and insulated or heated pipes. Approximately 40 ewes, 10 rams, or 50-75 feeder lambs can use one watering bowl. Water is the most important and often the most overlooked nutrient in a sheep's diet. Sheep do not like dirty water and will consume more if it is not fouled. Bowls should be checked daily and cleaned when needed. A quick scoop that only takes a second will clear the bowl of hay, straw, or manure.

If you are using ponds or dugouts as a water source, watch for build up of blue-green algae. This alga can be potentially fatal to livestock and humans.

Manure Storage

Store manure away from buildings and corrals to prevent run-off into sheep housing areas, water sources, and feed supplies. Take precautions when spreading manure to prevent contamination of water sources and oversupplying nutrients to soil. New provincial regulations regarding the handling and storage of manure will soon be in place. Contact OMAFRA to learn about these regulations and how to implement a nutrient management plan on your farm.

Canada Plan Service

Canada Plan Service (CPS) is a nationwide network of agricultural engineers and livestock specialists concerned with the planning, design and construction of modern farm buildings. Their goal is to gather ideas from across Canada and then develop construction and management recommendations. In this way, up-to-date building technology and farmstead management practices are available to all Canadian farmers. Ten technical committees, with membership drawn from each province, develop the Canada Plan Service publications. Publications take the form of detailed construction plans or management and construction leaflets. Each province distributes the plans and leaflets according to its needs. (See their website (www.cps.gov.on.ca) or contact OMAFRA (1-519-826-3100) for information on how to order building plans).

The CPS Information Resource focuses on the following areas:

1. Farm Structures and their Environments
2. Waste Handling and Storage
3. Animal Care and Comfort
4. Crop Handling, Storage, Processing and Conditioning
5. Rural Environment
6. Systems Engineering

A few of the plans available specifically for sheep housing and handling include:

- Pole frame sheep shed
- Slotted floor sheep barn
- Sheep drylot unit
- Shearing floor and fleece-sorting table
- 6-sided sheep feeder
- Adjustable feed bunk
- Mineral boxes
- Lamb creep feeders
- Feed rack
- Fence line and walk through feeders
- Sheep corral fencing and gates
- Loading chute

Building or renovating

When a decision is made to construct or make modifications to a farm building, new building code regulations must be considered. Farm building construction in Ontario is primarily regulated by the Ontario Building Code 1990. This code, proclaimed on October 1, 1990, recognizes farm buildings to a larger extent than previous Ontario Building Codes. **It is necessary to obtain a building permit for all**

agricultural construction projects in Ontario. Manure storage, grain bins and silos all fall into the definition of "farm buildings", and along with all other farm structures, will require building permits.

Farmstead Planning

When planning a new building or adding to an existing farmstead, you must consider such things as:

- Site drainage
- Services (lanes, power, water supply, waste disposal:
- Security
- Separation distances for snow and wind control, ventilation and disease control
- Distance separation from residences for control of noise and odours
- Municipal Regulations

Office of the Ontario Ministry of Agriculture, Food and Rural Affairs can provide many Factsheets and other publications pertaining to the planning of farm buildings, manure storage, etc. Check with your local municipality and OMAFRA early in the planning stage. The construction of livestock facilities is usually only permitted in agricultural zones. In addition, the location of the facilities is often restricted by setback distances from roads, lot lines, neighbouring houses and land uses. Usually these setback distances are based on the Agricultural Code of Practice and take into account:

- Number of animals on the site.
- Type of livestock
- Management system
- Degree of expansion
- Manure storage