

OSMA

New Producer Handbook



ONTARIO SHEEP MARKETING AGENCY



Agriculture and Agriculture et
Agri-Food Canada Agroalimentaire Canada

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TABLE OF CONTENTS

4	Welcoming You as a New Producer
5	What OSMA Has to Offer Producers
6	Be Prepared For the Future – Commit to Good Record Keeping
7	Licence Fees
8	Questions Often Asked by New Producers
11	Marketing Lamb in Ontario
12	Guide to Footrot in Sheep
16	Using Terminal Sires
20	Selecting Terminal Sires
24	How to Use Performance Records to Select Terminal Sires
28	Managing Rams for Superior Performance
32	Biosecurity: Livestock Purchasing Guide
34	Biosecurity: Movement and Isolation Checklist

WELCOMING YOU AS A NEW PRODUCER

The Ontario Sheep Marketing Agency (OSMA) welcomes you as a new producer. OSMA is a producer run and funded organization representing all sheep and lamb producers in Ontario. OSMA strives to enhance producers' returns and provide consumers with safe, premium lamb and related products.

We encourage Ontario sheep producers to provide a quality, year-round product. We focus on these objectives through our key strategic directions of ongoing marketing, promotion, advocacy, research and development, education and programs and services.

About your new organization:

The province is divided geographically into eleven electoral districts. Each district elects a Provincial Director to represent them on the board for a three-year term. The current board members are listed on the OSMA website or can be obtained by contacting the office directly.

The board typically meets once per month or every six weeks with the OSMA General Manager to review the funding allocations, staff activities and set direction. While each Board member is elected from each district, their role once on the Board is to set the direction for the industry. The role of the district executive is to work with the producers in each district. OSMA staff implement the direction set by the Board and also works with the districts and producers.

Each district holds an annual meeting at which district representatives are elected. This happens late summer (August and early September). The district executives are elected annually.

Each district holds its own AGM. In addition to that the OSMA AGM is also held in late fall (October or November). Each district sends delegates to the OSMA AGM (one delegate for every 30 producers in a district). The OSMA AGM gives producers an opportunity to review OSMA's activities, budget, and auditor's report. For the date and location of the Annual General Meeting please refer to the website.

Each district also hold meetings throughout the year, most are monthly meetings. Please refer to the OSMA website for the date and locations of these meetings. If you provide us with your email address, you will be emailed with the information as it is made available to us from the districts. We also provide a service for the districts to the producers of 'auto dialing' the producers and leaving a message. Most producers appreciate this service but if you would prefer not to be called, you will have the option of going onto the 'no call' list.



Photo Credit: Johanna Ramaker



WHAT OSMA HAS TO OFFER PRODUCERS

Programs and Services

OSMA offers a wide range of programs and services for producers. For more about OSMA, please visit the website.

OSMA Website

The OSMA website is a great resource for lamb producers and we highly recommend that you utilize this resource. Upcoming news and events are highlighted on the main page to keep you up to date with the latest news in the sheep industry. A resource library has also been added, which contains helpful information for people starting out in sheep or interested in getting sheep. Market information, current initiatives, programs and services as well as research can also be found on this site. Local sale barns and abattoirs can be located in your district for your convenience. Many helpful links can be found, including associate members, district websites, and member organizations. This website can be found at www.ontariosheep.org

Locators

There are three different locators, which may be of benefit to you. They include the Lamb Locator, the Guardian Animal Locator and the Breed Locator. Registration for a locator allows you to advertise your lamb and sheep for consumption, for breeding and as well allows for the sale of guardian animals on the OSMA website.

To register for a locator, go to the home page of the OSMA website and click on the Register button and fill in the information fields for the locator that you have selected. Your submission will be received at the OSMA office and you will be contacted if any questions arise.

Health Programs

Maedi-Visna Health Program

Maedi-visna is a debilitating viral disease that can undermine the economic viability of a sheep flock. The name Maedi-Visna is an Icelandic description of the two major forms of the disease (Maedi=progressive pneumonia and Visna=wasting). Although it is ultimately fatal, most of the economic loss attributed to this disease is due to decreased milk production; lowered weaning weights; increased incidence of severe arthritis and wasting; higher than average number of respiratory infections; and decreased ewe fertility.

The Maedi-Visna Flock Program is a voluntary program administered by the Ontario Sheep Marketing Agency, in conjunction with the University of Guelph.

The goal of the program is to identify and control the disease in participating flocks

This program is currently being updated; if you are interested in finding out more about the Maedi-Visna program, please visit the OSMA website or call the OSMA office.

Ontario Sheep Health Program

The Ontario Sheep Health program is a sheep flock health program developed by University of Guelph researchers at the Ontario Veterinary College, and administered by OSMA. It is available to anyone that wishes to download the forms from this site, free of charge. For producers that wish to enroll to receive official status, there is an annual nominal charge. For more information on this program please visit the OSMA website or call the office.

Other Health Programs

OSMA is constantly supporting education to producers regarding flock health. Whether it be through our programs, the Sheep News magazine articles, the web site, webinars and industry partner events, health flock is our primary importance to us.

The CSF (Canadian Sheep Federation) runs some national programs that you should be aware of. CSF looks after the Canadian Sheep Identification Program, National Scrapie Program, Bluetongue Insurance Program and the Food Safe Farm Practices Program. For more information on any of these programs please visit their website at www.cansheep.ca or call 1-888-684-7739 or 519-824-6018. The CSF also has two newsletters available on their website known as 'From the Flock' and 'Points of View'.



BE PREPARED FOR THE FUTURE COMMIT TO GOOD RECORD KEEPING

OSMA supports two different programs. Bioflock is complete management software and has been developed by OSMA and partners, BIO and Farms.com. GenOvis is a genetic evaluation program. You may know it by one of its former names, SFIP (Sheep Flock Improvement Program) or ROP (Record of Performance). If you are unsure of which one is best for you, call the OSMA office and ask to speak to a staff member who can help you access your needs.

bioFlock

bioFlock is a complete flock management software. This Canadian product was created by producers for producers. This is a web-based program which gives you complete data security; you can access your account anytime, anywhere. bioFlock allows you to record flock data, receive relevant production reports, generate your own reports, offers benchmarking, health records, financial details and genetic evaluations. This information can help you make management decisions, genetic advancements, improve your overall flock, and ultimately will help your farm business become more profitable. This program was developed or funded by the following partners; OSMA, Bio, Farms.com, OMAFRA and the Agricultural Adaptation Council. For more information on bioFlock please visit the OSMA website or go to www.bioflock.ca, you can also phone the Bio Office at 1-855-246-2333.

GenOvis

GenOvis (formerly known as SFIP) is a genetic evaluation program that enables producers to choose the best animals to increase and improve their flocks. This program can now be accessed through the web, allowing producers to enter their own data directly from their computer. Data can also be up loaded from several different types of flock management software as well. For more information or to enroll in the program, please contact the CEPOQ office at 1-418-856-1200 or go to the GenOvis Website at www.genovis.ca.



Photo Credit: Chris Boettcher



LICENCE FEES

Producer Funding:

In order to fund OSMA, a mandatory check-off fee of \$1.80 per head, plus tax, is collected on all live sheep sales. Producer check-off funds are used to:

- Encourage and promote the marketing of sheep, lamb, and wool products through promotional campaigns to increase public awareness. Among other activities, this includes developing new markets for Ontario products, development of promotional materials (recipe cards, posters), representation at public events (Royal Winter Fair, Western Fair etc.), and maintenance of the OSMA website, www.ontariosheep.org.
- Supply producer educational resources regarding marketing opportunities, means of improving production efficiency, and product quality. This also includes development of the website and publication of the Ontario Sheep News magazine. Published four times per year, the Ontario Sheep News (OSN) is provided to all registered producers. Each issue contains feature articles, updates on Board activities, market reports, and District news. The OSN is intended to encourage two-way communications between OSMA and stakeholders. Producers and other industry stakeholders are encouraged to submit letters to the editor and to place classified advertisements.
- Administration of various programs offered to Ontario sheep producers such as the Ontario Sheep Health Program and Maedi-Visna program.
- Provide a voice for Ontario sheep producers regarding developments within the agricultural sector (e.g. environmental initiatives, food safety issues, national identification programs.) through liaison with the Canadian Sheep Federation, other commodity groups and various levels of government.

Sheep/Lamb Licence Fees

Regulations made under the authority of the Ontario Farm Products Marketing Act require that producers pay to the Ontario Sheep Marketing Agency a licence fee per head for all sheep and lambs sold anywhere other than to a sales barn or abattoir (including breeding or farm gate sales). This applies to private livestock auctions as well. Unless such licence fees are paid, either to the sales yards, abattoirs, or OSMA, these sales are not legal under the Regulations. Hard copies of the Regulations will be faxed or mailed upon request, or can be viewed under Regulations on the OSMA website.

Under OSMA General Regulation # 1, the current License Fee (since December 1, 2010) is set at \$1.80 per head plus tax (13% HST as of 1 July 2010 = \$0.23) = \$2.03 in total per head. This applies to all sheep (lambs, ewes, rams, wethers).

Direct License Fee Remittance Forms are included in every issue of the Sheep News Magazine. Payment can be made in cash (at our office), by cheque or by credit card (Visa or Mastercard only). For any further information or clarification, please call the OSMA office at 519-836-0043.

As a Producer, the following rules apply: (All transactions may be subject to on-site audits)

1. If you slaughter any sheep for your own consumption on your own farm, fees are payable by you directly to OSMA
2. If you sell any live sheep direct to a customer (farm gate sales), the fees are payable by you directly to OSMA.
3. If you sell any sheep to another Producer for breeding purposes, the fees are payable by you directly to OSMA.
4. If you sell any sheep to any Feedlot Operator or other Marketer or Wholesaler, the fees are payable by you directly to OSMA, unless the buyer is a Licensed OSMA Sales Agent, in which case they will collect the fees from you and they will remit such fees to OSMA.
5. If you have your sheep custom-slaughtered for yourself at any Abattoir, the Abattoir will collect the fees from you and they will remit the fees to OSMA.
6. If you sell your live sheep to an Abattoir, the Abattoir will collect the fees from you and they will remit the fees to OSMA.
7. If you sell your live sheep at a stockyard (salebarn), they will collect the fees from you and remit the fees to OSMA. Buyers at stockyards are not required to pay the license fees; however, if they then have these same sheep resold or custom-slaughtered, they would be required to pay the license fees at that point.

(There are times when license fees are collected more than once on the same animal, but each animal owner/marketer only pay the fees once themselves.)



QUESTIONS OFTEN ASKED BY NEW PRODUCERS

As a new producer you may want to read the following information to help guide you in the right direction. Attending your district meetings will be very beneficial to you as it allows you to network with your peers, learn about what is happening in the industry especially about educational events and also industry concerns.

Referring to the OSMA website can also be beneficial. The resource library, under the Sheep Production Information tab contains information regarding all aspects of the sheep industry. This can be found by going to www.ontariosheep.org. On the website you will also find events, news, electronic copies of the Sheep News magazine and our Messenger newsletter. You should frequent the website as it is where we can quickly communicate with our producers and keep you up to date.

Frequently Asked Questions

FLOCK HEALTH IS #1.

The primary concern of anyone going into sheep production is starting with healthy, disease free sheep. Buy from a reputable producer. Ask if they have had their sheep tested for production limiting diseases such as Maedi Visna. Know what you are buying. It is more work up front but start with a healthy flock.

1. *I am interested in the sheep industry; what do I need to know?*

This is a big question, the answer to which encompasses learning about marketing opportunities, expected economic returns, and various aspects of sheep husbandry. The vast majority of the sheep operations in Ontario raise lambs for meat production or for replacement breeding stock. Although all sheep produce wool, prices have been low in the recent past, and wool production is not generally a primary source of revenue. There are, however, opportunities for value added wool products. There are a growing number of dairy sheep operations in Ontario, which produce milk primarily for cheese and other dairy products.

Learning as much as you can about different farm types, breeding systems, and reproductive management systems will help give you an overall idea of the structure of the sheep industry in Ontario. In doing this you will be able to determine the type of operation that will be best suited to your goals, labour expectations, and resources.

The type of farm you choose will depend on your current resources, and ultimately, your plans for the future. The farm type dictates how intensively the flock will be managed. In Ontario, most sheep farms are 'farm flocks', using a combination of indoor and pasture housing. Total confinement and pasture-based operations are also relatively common and there are increasing opportunities for feedlot and dairy operations.

The breeding system you choose will depend on whether replacement breeding stock or commercial meat lamb production will be your primary goal. Although replacement stock breeders will still market some lambs for meat, a portion of the lamb crop of purebred or first generation crossbred animals will be sold as breeding stock to commercial breeders. Therefore, with commercial lamb production the strengths of various breeds are used to maximize the lamb crop while optimizing lamb quality. Some producers use breeding systems designed to supply their own breeding stock from within their own flock for commercial production.

It is particularly important for commercial operations to have lambs ready to sell when demand is high. We are fortunate to have many different market opportunities throughout the year for our sheep and their products in this province. With a relatively short gestation period, ewes can be bred more than once per year, therefore, producers have several types of reproductive management systems to choose from. The most common ones are: once a year winter lambing (usually targeting the Easter market for new crop lambs); once a year spring lambing (main goal is to maximize use of pasture for lower feed costs and marketing lambs in September through December); accelerated lambing (either three times in two years or five lambings in 3 years). The focus of accelerated lambing systems is to market lambs on a year round basis, hopefully taking advantage of the lower cost of pasture based systems and hitting the high priced markets during the year.

Again, go to our 'Resource Library' on our website for more information. Our 'Links and Videos' section will take you to other excellent websites. We do not hold the monopoly on good information but we like to open all doors of knowledge to our producers.



2. *When is the best time of the year to sell lambs? Are prices always high at Easter?*

Lamb sales in Ontario are based on a free market, and prices can fluctuate widely from season to season and week-to-week based on supply and demand. It is important to stay on top of what is happening with the market and spread sales to minimize price fluctuations. Learn about the yearly and seasonal trends and use this information to your advantage when marketing. When considering what time of the year you want to market your lambs, make sure that you have a good understanding of the advantages of each production system, and which one will best suit your particular situation. For example, with winter lambing, feeding costs are relatively higher and you must market extra lambs to have returns similar to other production systems. Excellent prices are often seen for top quality new crop lambs at Easter, but particularly when supply is heavy, prices can plummet from one week to the next. As well, although price per pound is generally higher for light lambs, the average price per head is typically higher for lambs over 80 lbs live weight. Therefore, the cost involved in raising lambs to a heavier weight must be balanced against potentially greater returns.

3. *How much land and what type of barn do I need to raise sheep?*

How much land you will need per ewe will depend on many factors, such as whether you wish to grow or buy winter feed, the productivity of the land and how intensively you manage the flock. In most areas of Ontario, an open front pole barn is adequate for ewes lambing in the spring. With winter lambing, it is important to have at least part of the barn divided off and insulated (or warmed) during the lambing period. Hypothermia is the main cause of death in newborn lambs in Ontario. Lambing facilities should ensure that the temperature remains above freezing. For all types of housing, there must be adequate floor and feeder space for the number of animals.

4. *How many sheep do I need to make a living?*

The answer to this depends on the standard of living you want to maintain. Net return per lamb and the number of lambs marketed is more critical than the number of ewes kept. It will also depend on whether you expect the sheep to carry the mortgage for the farm. As general guidelines, you will need to keep a minimum of 300 ewes under an accelerated lambing program, and 600 to 1000 ewes under once a year lambing programs to expect to make a full time living from sheep farming. The majority of sheep producers also have an off-farm income. It is advisable to start with less than these numbers if you have no previous experience raising sheep. Fifty to 100 ewes will provide a good impression as to what is involved, justify any renovations that need to be done to facilities (particularly handling facilities), and provide a good number of lambs to market in your first year. Once you have an idea of the requirements, you will be better able to gauge how large your flock should grow.

5. *How much time will I have to invest in the flock?*

This again will depend largely on the type of management system that you choose. Generally speaking, the more intensive the system the greater the daily input of time. However, with any system the more time you spend monitoring the health and productivity of your flock, the greater your chances of success. This should involve maintaining a high level of flock health and maintaining records relating to flock production (animal health, lambing percentages, lamb growth rates, etc).

6. *What breed of sheep should I get? How should I select breeding stock?*

With over 40 breeds in Ontario this may seem to be a daunting decision. It is placed at the end of our list of questions, as the decisions that you make regarding marketing and production systems should be considered before choosing the breed. You will also have to decide whether to raise purebred or commercial sheep. Once the production system and breeding system are chosen, then selecting a breed will be much easier. Identify the breeds that should do well under your chosen production system and that will help produce lambs for the type of market you wish to supply. Identify as many of the traits that may be critical for success with the system you have chosen. For example, if you want ewes to lamb in the winter or in an accelerated program, choose a breed known for its ability to breed out of season. Across and within breeds, individual sheep will differ in economically important traits, e.g. milking ability in ewes, lambing percentage, adaptability to specific management conditions, rapid growth in lambs, etc. For a complete list of breeds please refer to the Resource Library on the OSMA website and look for articles on breeds. The Canadian Sheep Breeders' Association also has information about sheep breeds, their website can be found at www.sheepbreeders.ca.



Photo Credit: Shanna Armstrong



Types of Sheep Farms

The resources available to you will largely determine the type of sheep farm you choose to operate (land base, housing, etc) and by the type of reproductive management system you are interested in developing. The basic types of sheep farming in Ontario are briefly explained below.

1. Farm Flock:

This is the most common type of sheep farm in Ontario. Farm flocks combine pasture grazing for part of the year and indoor or corral housing for the winter. For example, ewes and lambs may be left on pasture until weaning when lambs are moved to feedlot pens for feeding until they are ready for market. Housing requirements for this type of system will vary with the reproductive management system. A wide variety of barns are used for winter housing of ewes including open sided sheds, pole barns, hip barns etc. Generally some type of insulated lambing facility will also be needed, depending when lambing will occur.

2. Pasture-Based:

This type of operation is more common in the Prairies than Ontario. This type of operation generally involves a large flock, requiring a large land base. The system involves spring lambing, pasturing throughout the summer, fall marketing of lambs either as finished lambs or feeders, late fall breeding of ewes, and wintering on pasture with appropriate shelter provided. The main advantages to this system are the low costs involved and given the right circumstances, can be very economical. The buildings, if any, are simple and the sheep graze all year, with supplemental feeding provided in the winter. Drawbacks to this system include the vulnerability of the sheep to predation by animals such as coyotes, wolves, and dogs. Weather in spring can be harmful to new lambs and losses can be high if shelter is minimal.

3. Total Confinement:

As the name suggests, both ewes and lambs are kept in pens year-round and require year-round feeding. Three-sided barns with pens extending to the outside are frequently used with this system. Advantages of intensive management systems are that they do not require a large land base, and fencing costs and predation losses are low. However, feed costs are generally much higher, animal health can be a problem if management is less than excellent, and more labour is generally required. This type of system is not overly common in Ontario and would be found most often with intensively managed accelerated lambing programs and feedlots.

4. Feedlot Lamb Production:

Feedlot operators purchase lambs that have not yet reached the weight at which they will be slaughtered and finish them on high-energy diets. With a relatively low average market weight, this type of operation is relatively uncommon in Ontario, as most sheep breeders hold their lambs until they are market weight. Lamb feedlots are more common in Western Canada, however the trend may eventually extend east. Depending on how large of an operation you are considering, feedlots can offer the flexibility of involvement in the sheep industry without having to commit the overhead and time necessary for maintaining a breeding flock.

5. Dairy Production:

Dairy sheep production is relatively new to Ontario, but is well established in other parts of the world. Currently there are a growing number of dairy producers in Ontario. Dairy sheep producers market both lambs and dairy products, with milk being processed into such products as cheese, yoghurt and ice cream. Operating a dairy flock requires specialized equipment, facilities, and the requirement of attending to milking daily during the season. Depending on your marketing arrangements, the extra overhead and time required may be offset by greater income stability compared to strictly producing market lambs.

6. Wool Production

With the exception of 'hair' sheep, all breeds produce wool and need to be shorn yearly. Wool prices in Canada have been low for a number of years. Generally, prices paid have not been sufficient to cover the cost of shearing. When world stocks of wool decrease, there may be an increase in price. As well, certain breeds of sheep produce wool that is valuable in specialty and niche markets. Depending of the resourcefulness of the shepherd, value added wool products can add substantially to the farm income. However, wool production is not often the primary reason for keeping sheep in Ontario.



MARKETING LAMB IN ONTARIO

Marketing decisions can dramatically affect the profitability of your operation. Your marketing strategy will influence important management practices, including the timing of breeding and lambing seasons, amount of feed required for raising lambs (pasture and/or confinement feeding), and lamb weight at marketing. Your marketing plan should determine your management system, rather than management dictating your marketing decisions. Learning about your options regarding where and when to market your lambs will help you make informed decisions regarding this important aspect of your operation. It is advisable to talk to other sheep producers and/or the OSMA director in your area to gain a full appreciation of marketing options in your district. For more information on marketing lambs please visit www.ontariosheep.org and go to the market information tab.

Where Should I Market My Lambs?

There are three basic approaches for marketing lamb in Ontario: through auctions, direct to buyers and/or packing plants, or directly to consumers. Each of these marketing strategies has advantages and disadvantages. A diverse marketing strategy using more than one of these approaches may help decrease the risk of having 'all of your lambs in one basket', if the price in one market falls.

For a complete list of sales barns and abattoirs please refer to the OSMA website under the market tab.

When Should I Market My Lambs?

As with all free market livestock commodities, lamb price fluctuates throughout the year and from year to year. Before you decide when to market your lambs it is important to learn as much as possible about typical price patterns and what to expect when marketing lambs of different weights. You may wish to market lambs at different stages to take advantage of various marketing opportunities, rather than relying on a single market for one weight range. Weekly and monthly market reports can be found on the OSMA website.

What Should Market Lambs Look Like?

Lamb weight	Different markets favour lambs of different weights. Generally speaking lambs in Ontario and Quebec are marketed at a lighter weight than in the West or in the US. Excepting various holiday peaks, the majority of lambs marketed in Ontario are between 65-79lbs. Buying a scale and monitoring lambs on-farm will help ensure your lambs are fitting into the desired category.
Degree of finish	The amount of finish (fatness) will depend to some extent on the age of the lambs. Generally speaking, market lambs should have a good fat cover, but not be overly fat (condition score of ~2.5). Condition scoring and modifying your feed schedule accordingly will help finish lambs properly. Be aware that some breeds will mature at different weights. If you wish to market heavy lambs, breeds with light adult weights may mature and be over-finished (too fat) before they reach the desired weight.
Healthy & Clean	Buyers will be much more likely to pay a good price for lambs that look healthy and clean. Some ethnic markets require 'unblemished' lambs, referring to the lack of marks, injuries, or other faults. Many buyers prefer shorn animals with docked tails. Shorn animals are easier for buyers to visually assess for quality (muscling, fat cover etc.). As well, shorn animals take up less room during transport. There is less chance of carcass contamination during slaughter by bacteria from soiled fleece if the animals have been shorn and the tails are docked.
Castration	Castration of ram lambs is preferred or of little importance in most cases. When marketing older lambs, castration may help decrease bruising from animals fighting. Generally, however, lambs will be marketed before they become sexually mature and some producers prefer to leave them intact. As well, certain ethnic markets favour ram lambs.
Uniform	If you are selling a number of animals, try to have the group as uniform as possible. Buyers are often looking for a specific type of animal. If your animals are similar in appearance, they may go for a better price than if the buyer has to pick and chose the preferred animals.
Food Safety	Maintain records regarding the use of medication and double check that animals being shipped to market have met the recommended withdrawal dates for all medications.

Any questions or comments, please call the OSMA office or email general@ontariosheep.org.

Our mailing address is:

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Guide to Footrot in Sheep

By Dr. Ileana Wenger

Sheep footrot is a painful, debilitating bacterial infection of the foot that can lead to severe production losses and increased culling of ewes. Sheep footrot is not the same as the infection that is seen in cattle, but it can be shared with goats; therefore goats must undergo the same prevention and control measures as sheep.

The best way to deal with sheep footrot is to avoid introducing it to your farm!

Be very cautious when you purchase sheep, and manage the biosecurity of your flock carefully.

If, in spite of your best efforts, your flock does become infected, and you find yourself with several lame sheep, there are some basic facts you need to know in order to start an eradication program.



Not every lame sheep has footrot so a correct diagnosis is critical. Footrot most often affects the front feet, forcing the animal to its knees. Sheep with infected back feet have a distinctive stance, as they try to keep their weight off their painful toes. Infected hooves are often encased in manure, which seals in warmth and moisture the bacteria needs to thrive.

Sheep Canada

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To subscribe to Sheep Canada, call 1-888-241-5124

or visit the website at www.sheepcanada.com.

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Causes of Lameness in Sheep

1. Active sheep footrot requires the presence of at least two separate bacteria in the foot:
 - a. *Fusobacterium necrophorum* is a common bacterium found in soil and present in animal feces.
 - b. *Actinomyces (Corynebacterium) pyogenes* is a common bacteria in soil and is also commonly found in foot abscesses.
 - c. *Dichelobacter (Bacteroides) nodosus* is responsible for sheep footrot infection. It lives in the feet of sheep, and can only survive for seven to 14 days anywhere else. *Dichelobacter* can persist for up to three years in chronically infected hooves.
2. There are three clinical causes of lameness in sheep associated with these bacteria; they are all related but it is important to be able to tell the difference between them.
 - a. Interdigital dermatitis (between the toes), also known as foot scald, is an early infection with *Fusobacterium*. Sheep with interdigital dermatitis have a moist, reddened, angry-looking lesion



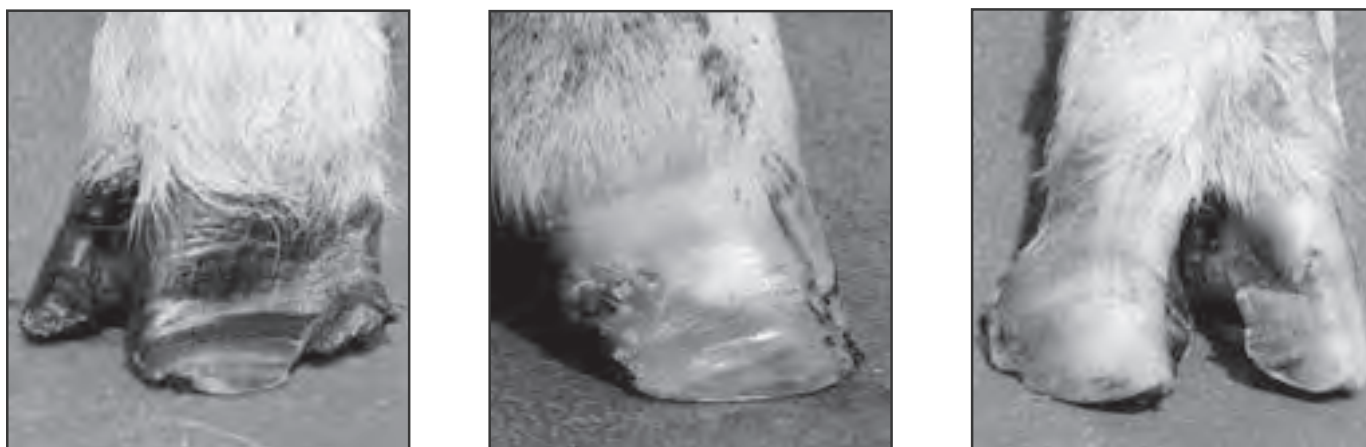
Footrot treatment is time-consuming, expensive and back-breaking work.

Footrot is extremely painful! It starts between the toes then under-runs the sole, causing the sole and the hoof wall to separate. The bacteria eats away at the hoof tissue, causing the foul smell associated with the disease.



- between the toes, often with a whitish layer of dead tissue on the surface. Lameness is usually mild but may progress to severe in some cases. It is generally seen during or shortly after a period of warm, wet weather, especially in conditions causing trauma to the feet (rocks or stubble grazing).
- b. Foot abscesses may occur when *Actinomyces* invades tissue already weakened by an interdigital infection. The sheep will be severely lame and an abscess can be drained from the sole of the foot. In prolonged cases the abscess may rupture and drain from the coronary band (the area at the top of the hoof where it meets the hair on the sheep's leg).
 - c. Footrot occurs when a carrier sheep infected with *Dichelobacter* is introduced to the flock and these very invasive bacteria infect the tissue that has been weakened by an interdigital dermatitis. Depending on the strain of *Dichelobacter* present, it can be a mild (benign) or very severe (virulent) infection. Sheep are often so lame they cannot walk and are seen on their knees trying to graze. The infection under-runs the hoof wall and sole, causing an extremely painful separation of the hoof from the underlying tissues.
3. Once the predisposing factors of warmth and moisture are present, the organism will easily spread from chronically infected carrier





Footrot damage is visible from the exterior of the hoof. The foot on the left has recovered but has a permanent crease where the hoof wall has collapsed. The middle hoof shows the dark shadow where the tissue underneath has died. The foot on the right has also recovered but is growing erratically.

sheep to other members of the flock. All ages and types of sheep are susceptible, although selection for genetically resistant sheep in countries where the disease is widespread has helped to reduce the severity of the disease.

4. Infection does not provide natural immunity to the disease. Young lambs may show signs of foot scald when housed with chronically infected ewes. Carrier sheep often have misshapen feet and may require more frequent foot trimming. Acute sheep footrot is usually accompanied by a distinctive foul odour and discharge.
5. Diagnosis in severe cases is based on clinical signs of lameness, separation of the hoof, discharge and foul odour. In early cases of interdigital dermatitis and less virulent strains, samples should be submitted to a lab by your veterinarian for confirmation.
6. Treatment of sheep footrot is time-consuming, expensive and backbreaking work. The best defense is to avoid bringing carrier animals into your flock. However, if your flock does become infected, it is not necessary to cull the entire flock. Sheep footrot is a treatable disease and can be eradicated from your flock if strict protocols are diligently followed.
7. Footrot vaccines are available in some countries, but are extremely variable in efficacy. This is due in part to the many different strains of *Dichelobacter* involved. Vaccines may help, when used in conjunction with foot trimming and soaking, but will not take the place of a comprehensive program of trimming and soaking.

Protocol for Eradication of Sheep Footrot

1. Thoroughly examine the feet of ALL sheep in the flock. Don't forget the rams.
2. Sheep with severely infected, misshapen or chronically infected feet should be culled.
3. Sort the flock into two groups: those with apparently sound, healthy feet (the exposed group) and those that are lame or known to be infected (the lame group).
4. Animals in the exposed group should have their feet carefully trimmed, and be footbathed in a 20% zinc sulfate solution according to the schedule in Figure 1. Disinfect hoof trimmers between animals.
5. After trimming and footbathing, move the exposed group to clean ground (no contact with

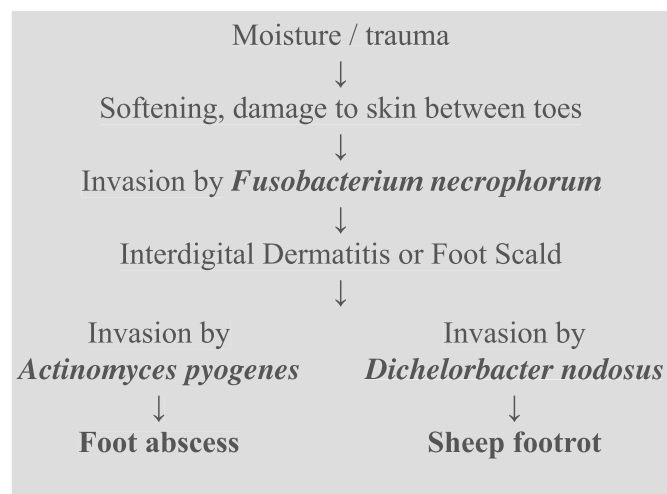


Figure 1. Footsoaking schedule for the eradication of footrot

Week	1	2	3	4	5	6	7	8	9
Infected Group	1 hour soak x 2	1 hour soak	1 hour soak	1 hour soak	1 hour soak	1 hour soak	1 hour soak	1 hour soak	1 hour soak
Exposed Group	1 hour soak x 2	1 hour soak x 2	1 hour soak x 2						

sheep for at least 14 days). Make sure they do not go anywhere near the infected group or walk on ground the infected group have walked on.

6. Trim the feet of all sheep in the infected group. ALL feet must be trimmed and all cracks, pockets or tracts must be dug out down to healthy normal tissue. Disinfect hoof trimmers between animals. We have found that a rotary tool such as a Dremmel is indispensable for this job. The bacteria must be exposed to air and the footbath solution to be killed. The rotary tool allows this to be done easily and safely.
7. Infected sheep should be treated with a suitable long-acting antibiotic at time of foot trimming.
8. Infected sheep must be foot soaked in a 20% zinc sulfate solution according to the schedule in Figure 1. Ensure that sheep stand in the bath for the full hour. The zinc sulfate is poisonous; do not allow the sheep to drink it.
9. After each treatment, the sheep should be turned out on to clean pasture (no contact with sheep for at least 14 days).
10. The feet of sheep in the infected group should be re-examined and re-trimmed every three to four weeks during the treatment period. Any sheep that start or continue to limp throughout the treatment period should be culled.
11. The flock cannot be considered cured until they have been through at least one warm/wet season after the treatments are complete.



Preparation of the Footbath

The design of the footbath will depend to a large extent on the number of sheep to be treated. It should be able to hold at least 10% of the flock at one time.

Zinc sulfate monohydrate power is available from feed and livestock supply stores and veterinary clinics. The required foot soaking solution is 10% zinc sulfate with a wetting agent (liquid laundry detergent) added. A 10% solution is equal to 1 pound of zinc sulfate powder in one imperial gallon of water or 1 kg of powder in 10 litres of water.

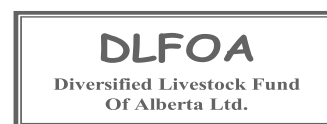
To calculate the capacity of the footbath, multiply the length by the width by the water depth. One imperial gallon equals 280 cubic inches. Be sure to use the inside measurements of the footbath when calculating its capacity.

For example, a footbath that is 16 feet long by 4 feet wide might have inside measurements of 189 inches by 45 inches. If it holds water to a depth of three inches, the footbath would have a capacity of $(189 \times 45 \times 3) / 280 = 91$ gallons. This footbath would require 91 pounds of zinc sulfate.

Add one cup of liquid laundry detergent to the foot bath for every 30 gallons of solution, just over three cups in this example. This acts as a wetting agent, enabling the solution to adhere and penetrate into the hooves.

The concentration of the solution must be checked frequently, as it will be considerably less effective if it drops below 10% zinc sulfate. Use a battery tester (NOT an antifreeze tester) to monitor the solution. Used zinc solution can be an environmental hazard and should be disposed of on a manure pile where it will be composted and diluted with organic material before being spread on cropland.

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Building Better Lambs

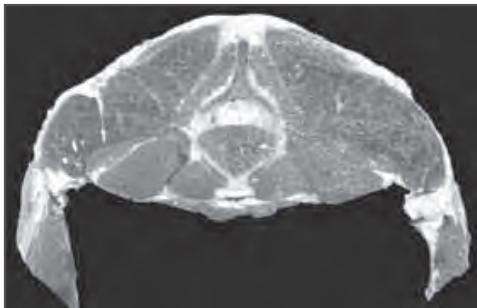


1: Using Terminal Sires

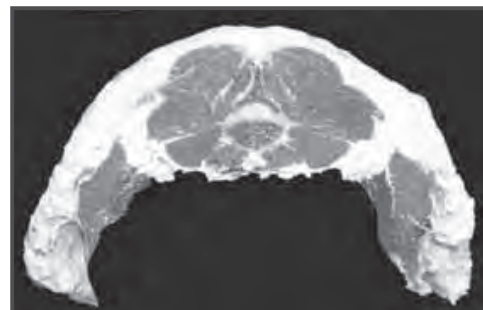
Take Home Messages

- Terminal sires can increase lamb growth rate and lean meat yield.
- Terminal sires should be used in flocks with strong maternal traits.
- All offspring from terminal sires should be sold for slaughter.
- Maternal traits are relatively unimportant in terminal sires.

The majority of sheep farms in Canada generate most of their income from the sale of lambs for meat. Whether you sell to a large packer or have established a list of farm direct customers, lean meat is what consumers want. Fortunately, most traits associated with growth and carcass conformation are moderately to highly heritable and significant gains can be made through genetic selection. To maximize growth rate and lean meat yield, producers should consider a cross breeding program using terminal sires.



Consumer preference - excellent lean meat yield



Consumer displeasure – excessive fat

Do you need a terminal sire? A terminal sire, or ram, is used when the primary objective is to produce good quality market lambs. It can provide the genetics to boost lamb growth, feed efficiency and carcass quality. The benefit of a terminal sire is maximized when used in flocks with strong maternal traits. When you are using a terminal sire that has superior growth and carcass traits, it is recommended that all offspring go to slaughter. Maternal sire breeds are used to improve those traits you need in a breeding ewe flock – don't confuse the purpose of the rams you're using. Maternal traits such as milk production, mothering ability and prolificacy are less important in a terminal sire because all lambs sired should be sent to slaughter.



Identify the terminal sire breeds of sheep that are available to you. There are dozens of breeds of sheep. Terminal sire breeds are specifically known for:

- **growth rate** – average daily gains in well-managed males can exceed 0.5 kg (1.1 lb.) per day and days to market weight can be less than 100 days;
- **feed efficiency** - feed to gain ratios can be as low as 3.5 to 1 when high concentrate diets are used. Feed is typically more than 60 per cent of the cost of producing a market lamb;
- **muscling** – well-developed muscling in the loin and leg areas is highly desirable for market lambs. Assessing muscling of live animals is a hands-on procedure and needs practice. Muscle scores on grading reports are the result of visual appraisal by trained graders;
- **lean meat yield** - fat is not muscle. A grade rule (GR) measurement at the 12/13th rib on a carcass is an indication of overall carcass fatness;
- **large mature size** – growth rate and mature size are correlated. Select a terminal sire breed that will result in carcass weights that fit your target market. Typical carcass yield is 49 per cent of live weight.

Determine what specific characteristics you need in a terminal sire to best complement your current ewe flock. Start by taking a critical look at the lambs you are producing. Consider the following:

- The longer it takes to get your lambs to market weight, the more it costs you. Using terminal sire breeds that exhibit superior growth rate and feed efficiency will likely improve your profitability;
- If you sell only on a live weight basis, a breed that provides maximum growth to market weight is most important;
- If you sell on a carcass basis check your grading sheets or talk to the butcher.
 - › If lambs lack muscling or have been discounted on conformation scores, then consider breeds with superior muscling;
 - › If lambs are over-fat (but in the target range for carcass weight), then look for a breed with low back fat to improve lean meat yield.

The Lakeland Carcass Sire (LCS) project, conducted at Lakeland College, Vermilion, Alberta, was designed to compare the growth and carcass characteristics of lambs sired by the five terminal sire breeds commonly used in Western Canada.

The sire breeds selected for the three year project were: Canadian Arcott, Charollais, Ile de France, Suffolk and Texel. Each year five rams of each breed were individually exposed to 10 ewes of maternal breeding to produce crossbred lambs. Sires were obtained from 22 breeders in Alberta, Saskatchewan and Ontario.



Well muscled carcass (left) compared to a poorly muscled carcass (right)



Summary of the Results of the Lakeland Carcass Sire Project



Canadian Arcott

- best used to increase growth rate of market lambs
- lambs exhibited highest level of fat (highest GR measurement)



Charollais

- best used to increase growth rate and for general improvement in all traits



Ile de France

- best used to increase muscling and lean meat yield of market lambs



Suffolk

- best used to increase growth rate of market lambs
- lambs exhibited lowest level of fat (superior leanness)



Texel

- best used to increase muscling and lean meat yield of market lambs
- lambs exhibited low levels of fat (superior leanness)



The LCS project provides information to help producers make better decisions on which terminal sire breeds will complement their ewe flock genetics and improve the carcass quality of their market lambs. Detailed results for the project are available in the paper entitled “Growth, Carcass Characteristics and Weights of Retail Cuts of Lambs Sired by Five Terminal Sire Breeds” which will be posted on Alberta Agriculture and Alberta Lamb Producers’ websites after publication.

In summary, the project showed that no single terminal sire breed was superior for all the desirable carcass characteristics required in a lamb supply chain. Once again, there is no “magic bullet,” but the project results confirmed that producers who sell lambs on a live weight basis should consider the superior growth rate of Suffolk, Canadian Arcott and Charollais sires. Producers selling on a carcass basis should look at the superior leanness of Suffolk sires if their flock produces lambs that are over fat, or the superior conformation of the Ile de France or Texel if their lambs lack muscling. Some may prefer the “all purpose” attributes of the Charollais sires who had intermediate or superior rankings for every trait examined.

Other Considerations

While the Lakeland project tested a sample of the terminal sire genetics available in Canada, it was not comprehensive enough to provide a complete assessment of each breed. Breed data in genetic improvement programs such as GenOvis (www.genovis.ca) should also be consulted. Also, there is significant variation within each breed for the traits studied – certain genetic lines within breeds may produce different results.

Hybrid vigour will increase lamb survival rates in your flock - pick terminal breed genetics that are different from your ewe flock.

Remember, genetic improvement will only be possible and profitable when good nutrition and husbandry practices are carried out. Superior genetics will not overcome inferior management practices.

Additional Reading

The Lakeland Carcass Sire (LCS) project, conducted at Lakeland College, Vermilion, Alberta, was designed to compare the growth and carcass characteristics of lambs sired by the five terminal sire breeds commonly used in Western Canada.

Building Better Lambs 2: Selecting Terminal Sires

Building Better Lambs 3: How to Use Performance Records to Select Terminal Sires

Building Better Lambs 4: Managing Sires for Superior Performance

Useful Websites

Canadian Sheep Breeders Association <http://www.sheepbreeders.ca/info.html>

Genovis www.genovis.ca

Lakeland Carcass Sire Project [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sg10536](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sg10536)

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Editor: Susan Hosford (ARD)

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Building Better Lambs



2: Selecting Terminal Sires

Take Home Messages

- Terminal sires are a valuable tool to improve the quality of market lambs.
- Choosing the breeder is as important as choosing the individual sire.
- Use performance records to select the best terminal sire you can afford.
- Rams must be structurally sound enough to breed to get any benefit from their genetics.

A terminal sire, or ram, is one that provides the genetics to maximize lamb growth, feed efficiency and carcass quality. Using a terminal sire can result in superior market lambs that meet the demands of your targeted market.

Step 1 - Select the terminal breed or breeds that best fit with your ewe flock and can improve the quality of market lambs you produce. Knowing what you have to improve in your flock will give direction to what terminal sire breed will optimize the ewe flock's performance. (See fact sheet *Building Better Lambs 1: Using Terminal Sires*.)

Step 2 - Select the breeder flock. It is generally desirable to pick a breeder who raises sheep in an environment that is similar to your farm. For example, if you plan to pasture finish your lambs, then selecting a sire from a breeder who also uses pasture to grow his young rams is a better choice than selecting from a breeder who confines his flock and feeds a high level of concentrates. However, don't ignore other factors such as health status and quality of performance records when making this choice. Also remember that valid between-flock comparisons of performance can only be done when animals are managed under the same environment (e.g., test stations or where models are used to remove environmental and management differences, i.e., sire reference programs).

Step 3 - Assess the health status of the breeder flock. The introduction of new animals is one of the most common ways to introduce new diseases to your flock. While not all diseases are production limiting, most may have a significant impact on your flock's profitability. An essential part of your biosecurity program is knowing the health status of your flock so you can select sires from a flock of similar or higher health status. Try to select from flocks with low levels of lamb and adult death loss. Here are some recommendations to help protect your flock:

- Ask breeders about their biosecurity practices:
 - › For what diseases do they have control measures in place, and what are the measures?
 - › Do their sheep co-mingle with other flocks at any time?
 - › Do they share rams with their neighbours?
 - › Where do they obtain replacements from?
 - › What biosecurity measures are followed when new animals are introduced?



- It benefits breeders to be on a flock health program with third party validation. The Western Canadian Flock Health Program is presently under extensive review with a vision to provide this type of assurance for sheep producers.
- Ask for details of the flock vaccination program.
- A review of the flock mortality records will give you a good idea of overall health status. Request post mortem reports, if available.
- How many abortions occur in the flock, particularly in the ewe lambs? This will serve as an indication of abortion diseases affecting the flock. Are abortion control measures in place?
- How many lambs are born live as a percentage of ewes exposed? This is an indication of overall flock fertility and lamb management.
- What percentage of lambs born reach market weight? This is an indication of maternal ability and level of management.
- Visually inspect the whole flock, not just the ram pen. As you walk slowly through the flock, watch carefully for any signs of lameness, abscesses, sore mouth in lambs, respiratory symptoms and overall condition.
- Ask about the flock veterinarian - is there one? Request a written assessment of the flock health status from the veterinarian.

Remember that biosecurity is as important to the breeder you are visiting as it is to you. Respect their requests to wear protective footwear/coveralls, and to limit access to their farm yard to outside vehicles. They are protecting their ability to provide you with the best animals possible; help them to help you.



Superior genetics or superior environment?



Step 4. Select terminal sires on the basis of performance records. After choosing a breed and a breeder, decide which individual ram will be best for your flock. Remember, what a ram looks like “on the hoof” is the combination of both his genetics and the environment in which he was raised. Level of nutrition is a major part of the environmental component. To determine the genetic component, the environmental component needs to be standardized or removed from the calculations. There are a limited number of genetic improvement programs available to Canadian breeders that remove the effect of environment (e.g., GenOvis – www.genovis.ca). They focus on measurement of economically important traits, and provide valuable data for breed improvement and terminal sire selection. Assessing performance data based directly on the ram’s own performance is useful, but considering as well the performance of the ram’s relatives is often beneficial. Without good performance evaluation programs, measuring traits accurately and providing valid comparisons are nearly impossible. For more detailed information, go to the fact sheet entitled *Building Better Lambs 3: How to Use Performance Data to Select Terminal Sires*.

What if you can’t find a breeder who can provide performance records for your sire selection process? The first thing to do is keep looking. There is no good substitute for performance records when you are purchasing a sire to build better lambs. Look beyond your region, province and even your country. If performance records are missing:

- Check for birth dates of prospective sires and if a current weight is available, calculate weight per day of age. This is most valuable if prospective sires are ram lambs and have been managed and fed in the same group. For mature rams get birth dates and current weights of their offspring if available;
- Check for birth type (single, twin, triplet). A twin that is of similar size (and age) compared to a single will have better genetics for growth;
- Check for the incidence of lambing difficulty (dystocia) in the flock, especially the prospect’s sire and other relatives. A sire that required assistance for his own birth should be avoided;
- Ask to see carcass data. Are conformation scores and GR measurements superior to what you are now achieving? If not, you are not likely to make genetic improvement purchasing a sire from this flock.

Step 5. Ensure structural soundness. After you have used the breeder’s records to select two or three times as many rams as you intend to purchase, it is time to go to the barn and look the prospects over. Things to look for include:

- Body condition score (1- 5). A score of 3.0 to 3.5 is optimal for good breeding condition.
- Are feet and legs reasonably straight and sound?
- Does the ram move about easily without limping?
- Is his bite normal? Check his mouth for over or under bite.
- Can he see through each eye?
- He should have two testicles of equal size. Minimum scrotal circumference should be 30 cm for ram lambs between 8 and 14 months and 32 cm for all those over 14 months of age, regardless of breed.
- Check the ram’s prepuce and penis for any abnormalities that would interfere with breeding.
- Relatively oversized head and shoulders may cause lambing problems.
- Assess overall health.



Step 6. Ensure breeding soundness. Breeding Soundness Exams (BSE) and Serving Capacity evaluations will help ensure that the genetics you are purchasing are actually transmitted to your flock. Discuss the details of these procedures with your veterinarian and refer to the fact sheet entitled *Building Better Rams 4: Managing Rams for Superior Performance*.



Measuring scrotal circumference is part of the Breeding Soundness Exam

Additional Reading

The Lakeland Carcass Sire (LCS) project, conducted at Lakeland College, Vermilion, Alberta, was designed to compare the growth and carcass characteristics of lambs sired by the five terminal sire breeds commonly used in Western Canada.

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Building Better Lambs 3: How to Use Performance Records to Select Terminal Sires

Building Better Lambs 4: Managing Sires for Superior Performance

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Genovis www.genovis.ca

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Building Better Lambs



3: How to Use Performance Records to Select Terminal Sires

Take Home Messages

- Performance records are a valuable tool for selecting superior terminal sires.
- Understanding and using performance records will take some effort.
- Focusing on the traits most needed in your market lambs will result in faster improvement.
- Structural soundness and good ram management are required to capitalize on superior genetics.

If you don't understand performance records or breeder data, you need to. Building better lambs is not guess work. There is variation in what and how information is presented in breed improvement programs (and of course in breeders' records). However, most evaluation programs publish basic EPDs for the economically important traits. An EPD (Estimated Progeny Difference) is an estimate of the genetic value an animal will pass on to its progeny. Sheep with the best EPDs for a trait have the highest probability of producing lambs excelling in that particular trait. EPDs are expressed in the same units in which the trait is measured. For example, an EPD for 100 day gain would be expressed in units of weight (kg or lb.). An EPD for depth of back fat would be expressed in millimetres. EPDs should come with an estimate of their "accuracy," an indication of how much information was available to evaluate a particular animal for the trait. EPDs are more accurate for a particular sire when he has a large number of offspring recorded in the program. There is a need for genetic performance databases, which accumulate data from many breeders and evaluate the performance of animals with common ancestry, to generate reliable EPDs.

The performance traits most useful for terminal sire selection are:

1. **Rate of gain** (growth rate, average daily gain)
 - a. 50-day gain – direct. This is the ram's own ability to grow from 0 to 50 days of age. The higher the EPD the better. It is important to note that this is a more useful measure for terminal sire selection than "50 day gain- maternal" which is a measure of the amount of milk available and the mothering ability of the ewe, which are important when selecting females for replacements.
 - b. 100-day gain. This is the ram's own ability to grow from 50 to 100 days. The higher or larger the EPD the better.
2. **Carcass quality**
 - a. Loin eye depth or area. On potential stud animals, loin eye is measured with ultrasound technology, usually when the ram is close to market weight. A ram with a larger EPD is more likely to sire lambs with better lean meat yield overall.
 - b. Back fat depth. This is also measured with ultrasound technology. In this case a negative EPD is usually preferred in order to minimize excess external carcass fat.



How do you decide which trait or traits to use in making your selection? If your lambs are noticeably weak in one of trait, e.g., slow growth, then focus on that one trait when selecting the next sire of your market lambs, just as you did when selecting the breed. Generally speaking, selection for one trait at a time will result in faster progress than selection for multiple traits at once. But what if you want to see improvement in several traits at once? Growth and terminal sire indexes are available in breed improvement programs in some areas e.g., GenOvis and Sheep Flock Improvement Program (SFIP). Such an index balances the emphasis on several traits at once to allow improvement to be made in more than just one trait. The index is expressed as a “percent,” reflecting the relative degree or amount of improvement that can be expected. A growth index combines the EPDs for growth rate, while a terminal index combines EPDs for growth rate, lean meat yield and fat depth into a single index. Selecting a terminal sire on the basis of his terminal index should result in lambs that grow faster and have greater lean yield.

Which sire would you select to build better lambs in your flock?

Ram ID	Progeny Count	Maternal EPD	Growth EPD	Terminal EPD
A	40	4.23	3.96	4.92
B	50	2.22	4.05	5.56

Note: data from Top 2009 Suffolk Rams report (Sheep Flock Improvement Program, OMAFRA)

Both rams have a similar number of progeny in the data base (40 vs 50), so the accuracy of their EPDs should be similar. Ram A has a superior Maternal EPD (4.23 vs 2.22), but remember, this is not important since you are purchasing a ram to produce market lambs, not replacement ewe lambs. Ram B has a superior Growth EPD and a superior Terminal EPD (both growth and carcass traits used in the calculation) and would be the better choice.



Ram lambs with good growth and performance records are a good choice for siring market lambs, but they do need special attention. They should be well grown, in good body condition and used in breeding areas where they are monitored daily.



Weighing lambs regularly not only assists marketing at the right weight, it also helps evaluate how much the terminal sire has added to the growth rate of his offspring.





Randy Smith, Sunterra Meats demonstrates the location where GR (grade rule) measurements are taken.

Sunterra Meats as a project stakeholder

The Lakeland Carcass Sire project was initiated to look into ways lamb producers could increase carcass consistency. A pricing grid, to encourage the production of premium quality lambs, came into effect at Sunterra Meats in October 2004. Producers found it challenging to hit the weight, fat and conformation score targets. Better information on terminal sires was needed.

Having a processor as a project stakeholder working directly with industry was important in addressing industry issues: production of better market lambs, using terminal sires, and improving carcass quality and consistency. The collaboration of the entire lamb supply chain is key to building better lambs.



A grade rule (GR) measurement is taken to measure the amount of fat on the lamb carcass.



Performance records are an essential tool for selecting a top notch terminal sire. However, genetic improvement in the flock will only be achieved if the ram is physically sound and properly managed. For additional information, refer to the fact sheets entitled *Building Better Lambs 2: Selecting Terminal Sire*, and *Building Better Lambs 4: Managing Rams for Superior Performance* in the Building Better Lambs series.

Additional Reading

Several fact sheets from the Ontario Ministry of Agriculture, Food and Rural Affairs provide more detail on understanding and using performance records.

1. *Using Performance Records for Sheep Selection* (<http://www.omafra.gov.on.ca/english/livestock/sheep/facts/00-083.htm>)
2. *Selecting the Right Ram with EPDs* (<http://www.omafra.gov.on.ca/english/livestock/sheep/facts/select.htm>)
3. *Sheep Flock Improvement Program EPDs* (<http://www.omafra.gov.on.ca/english/livestock/sheep/facts/sfipepds.htm>)

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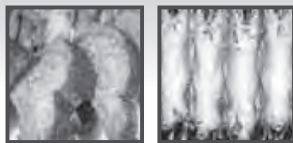


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4: Managing Rams for Superior Performance

Take Home Messages

- Protect your investment in good genetics with good nutrition, health and management protocols.
- The two months pre-breeding and the breeding season itself are critical times in a ram's life.
- Have a plan for introducing new rams to the flock.

The terminal rams in a flock provide 50 per cent of the genetics for each lamb crop. All too often the rams get neglected for the 10 months of the year they are not needed, and yet are expected to breed 25 to 50 ewes or more in a six-week period.

1. Housing considerations. Rams should be kept separate from the ewe flock except during defined breeding periods. During this time they need a pen or pasture with sufficient room to exercise and maintain general fitness. During a normal Canadian winter they need enough straw or other bedding to ensure that their testicles are not frost bitten. They may not need a roofed shelter, but they do need protection from the wind. Feed rams to meet their nutritional requirements as the seasons change. Rams that are exposed to cold winter temperatures need extra energy in their daily ration to compensate for heat loss. During the heat of summer, rams should have some form of shade and full access to good quality water. Ram lambs require a higher level of nutrition than mature rams, and should be housed separately.

2. The feeding program. Rams should be fed to maintain a body condition score of 2.5 to 3.0 (scale 1-5) for most of the year, with 3.0 -3.5 as the target for breeding season. Condition score your rams monthly to ensure they are in the target range. Good quality hay, silage or pasture usually provides sufficient protein and energy to get the job done. Supplement with grain if poor quality roughage or straw makes up more than one third of the total ration. Rations should be balanced to ensure that vitamin, mineral and trace mineral requirements are met. Remember that ram lambs need higher levels of energy and protein in order to reach their potential mature weight and size. Don't forget that rams need salt and minerals too. Clean fresh water is critical for ram health.



Rams need access to clean water.



3. Over feeding resulting in rams getting too fat should be avoided at all times. Condition scores greater than 3.5 are excessive for rams. The adverse affects of excessive fatness include:

- reduced fertility from overheating of the testicles;
- poor mating performance – lack of aerobic fitness and mating dexterity, especially a concern when breeding ewe lambs or small ewes;
- lameness – due to cartilage damage during rapid growth or laminitis (founder);
- increased susceptibility to heat stress;
- unnecessary feed costs.

4. The Health program. Be sure to include rams in your general flock health discussion with your veterinarian. Normally rams should be vaccinated against the same diseases as the ewe flock. Parasite management practices recommended for ewes should be applied to the rams as well. Treatment protocols for specific diseases will be similar to what the ewe flock receives, making allowance for the increased body weights of rams. Check or observe your rams regularly for any signs of illness or disease. Feeding time provides a good opportunity to detect any abnormal behaviour that may be related to illness. Routine foot trimming and shearing in sync with the ewe flock should be practised.

5. Pre-breeding season. The ram battery should be evaluated two months before breeding season. Condition scoring will allow you to adjust the feeding program in order to get your rams in the target condition (score 3 to 3.5) for breeding. If the ewes will be receiving grain during the breeding season, make sure the rams are accustomed to a similar level by the time they are put with the ewes. This can be done over the three weeks preceding the turn out date. Annual vaccine boosters should be given and feet examined and trimmed if necessary. Annual shearing should be done by this time. A Breeding Soundness Examination (BSE) should be done by a veterinarian at least 30 days before the ram is to be used. The best genetics in the world are of little value if the ram is sterile (a rarity) or sub-fertile. Routine BSEs done on the Lakeland Carcass Sire project rams showed that 10 per cent of rams were unsatisfactory. A BSE includes the following :

- Physical examination of the ram and sexual organs;
- Measurement of scrotal circumference;
- Collection of semen;
- Microscopic examination of a semen sample for motility and defects;
- Classification into one of four categories: excellent, satisfactory, questionable or unsatisfactory.

The BSE does not include an assessment of libido (interest in breeding) or serving capacity (ability to breed successfully). Discuss this with your veterinarian during the BSE. You can assess the ram's libido by putting a couple of ewes in the pen and observing his level of interest. Indifference is not good. If the ewes are in estrus you can also assess the ram's serving capacity. At the very least you should always observe the ram in the breeding pasture to assess his libido and mating competence. Rams that have a short penis may not be identified during a BSE so this is an important task.



Microscopic examination of a semen sample slide



6. The breeding season. To get maximum genetic value from your rams, manage the breeding program with the following thoughts:

- It is common to flush ewes for breeding by feeding them supplemental grain. Make sure the rams are accustomed to grain before they are turned in with the ewes. A sick ram isn't a good breeding ram; a dead one is even worse.
- Use a marking harness or brisket paint on all rams. This helps to evaluate the breeding performance of the rams. Change colour of paint or chalk on the harness every 17 days. Start with a light colour. A large number of ewes re-marking may indicate a ram or ewe fertility problem.
- When using more than one ram in a group of ewes, try to use rams of similar size and age. Three rams work well, two may fight and one gets on with breeding. Be sure to familiarise rams that will be working together before they go into the breeding pen. Ram lambs should not be used in multiple-sire breeding groups with mature rams. Larger, older rams tend to dominate smaller rams and can inflict serious damage on a young ram. The dominant ram will breed or mark more than his share of ewes, potentially resulting in lower conception rates and lower lambing percentages.
- Establish a ram to ewe ratio of up to 1:25 for ram lambs and 1:50 for mature rams. Change or rotate rams every two weeks in commercial flocks. Synchronized breeding programs require ratios of 1:5 or 1:10.
- Rams can lose up to 15 per cent of their bodyweight during a 45-day breeding period. This may have a negative impact on their serving capacity. This is why a condition score of 3.5 is desirable at the start of the breeding season.



Using a marking harness to assess breeding activity

7. Bringing home a new ram. Introducing a new ram to the flock requires management. Travel and arrival in new surroundings are stressful for rams. Any new arrival should be isolated for four weeks as part of your biosecurity program. This also gives the new ram time to become adjusted to his new environment. During this period you should:

- Observe daily for any signs of illness or disease;
- Introduce new feeds gradually over seven to ten days (this is particularly important for high energy feeds, silage and lush pastures);
- Vaccinate as recommended by your veterinarian;
- Provide the level of nutrition required to obtain or maintain breeding condition.



After the isolation period it is time to introduce the new ram to the other rams. Add the new ram to the group at least a week in advance of the breeding season so that they sort out their dominance. If possible add the new ram(s) to a group that is similar in age and size. Do this in a very small pen or even a stock trailer. Take time to watch the rams over the first couple of hours to ensure that the new ram is surviving the inevitable fighting.

8. Culling. Rams should be culled from the flock if they are not capable of breeding, if improved genetics are required or to avoid in-breeding. If the ram is sound and less than five years of age it may have some value to other producers. Another option is to have the ram vasectomized and used as a teaser. If there is no use for the ram, he should be culled soon after the breeding season in order to save the cost of further feeding. In contrast with the beef industry, there is no profit in feeding rams to better condition in hope of getting a better price for sale as meat animals.

Additional Reading

The Lakeland Carcass Sire (LCS) project, conducted at Lakeland College, Vermilion, Alberta, was designed to compare the growth and carcass characteristics of lambs sired by the five terminal sire breeds commonly used in Western Canada.

Building Better Lambs 1: Using Terminal Sires

Building Better Lambs 2: Selecting Terminal Sires

Building Better Lambs 3: How to Use Performance Records to Select Terminal Sires

Sheep and Goat Management in Alberta – Reproduction

http://www.ablamb.ca/producer_mgmt/sheep_goat_mgmt.html

- *Body Condition Score in Sheep – Appendix 1 (P.55)*
- *Management of Breeding Rams and Bucks – Section 7. (P. 47)*
- *Reproductive Problems in Rams and Bucks – Section 8. (P.51)*
- *Breeding – Section 1. (P.1)*

Sheep and Goat Management in Alberta – Nutrition

http://www.ablamb.ca/producer_mgmt/sheep_goat_mgmt.html

General guidelines for feeding sheep and goats

<http://www.sheepandgoat.com/articles/generalfeedingguidelines.html>

What's the Score? Body Condition Scoring for Livestock CD available from ARD 310 FARM or 1-800 292 5697.

Useful Websites

Canadian Sheep Breeders Association <http://www.sheepbreeders.ca/info.html>

Genovis www.genovis.ca

Lakeland Carcass Sire Project [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sg10536](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sg10536)

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SUNTERRA
MEATS

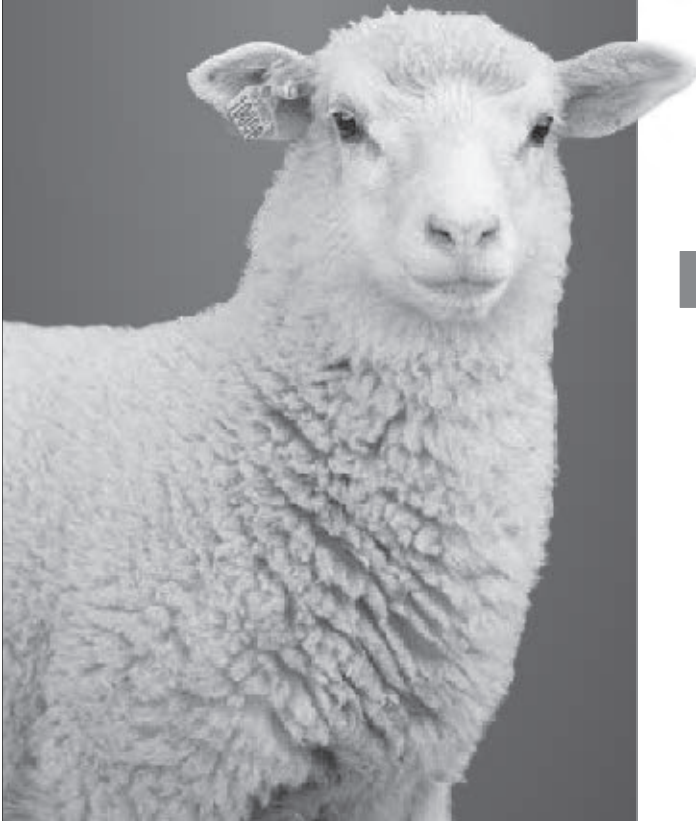
Government
of Alberta



Livestock purchasing guide

SHEEP

New sheep coming onto your farm may bring unwanted diseases with them. Disease outbreaks can be costly to a farm's bottom line, so to minimize your risk, here's what to look for when buying new livestock.



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BUYING

- Limit the introduction of replacement stock and rams to those where you know the health status.
- Know the disease status and biosecurity practices of the flocks you're buying from. Animals that have been commingled have potentially been exposed to many different pathogens that they can bring into your flock.
- Keep records of the sheep that come onto your farm – record their health status, point of origin and point of purchase.

MOVEMENT AND TRANSPORTATION

- Do not transport unfit animals.
- Reduce stress during transport – strong animals are better able to resist pathogens.
- Clean and disinfect transport trucks and trailers in between loads or ensure that your transporter has an appropriate protocol in place.

ISOLATION AND INTRODUCTION

- New animals must be commingled with the existing flock in a timely manner outside the breeding–gestation and lambing periods to allow sufficient time for them to develop immunity prior to being integrated with the main flock.
- Quarantine or isolate new additions or animals returning to the farm from other locations, like shows, events etc.
- Have a veterinary-approved vaccination program in place. Treat and vaccinate sheep of unknown health status when they arrive.
- Observe new animals' health status and their response to the new farm site.
- Isolate sick animals or animals you suspect are sick from the rest of your flock.
- Implement enhanced biosecurity between sick pens and quarantine areas and the rest of your flock to avoid disease spread.





For more information, visit www.agbiosecurity.ca or contact Ontario Sheep Marketing Agency at **519-836-0043** or general@ontariosheep.org.

This project was funded in part through Growing Forward, a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of several Growing Forward programs in Ontario.



HEALTH AND HOUSING

- Protect feed and water sources from urine, manure and other contaminants, including cats and rodents.
- Ensure all animals have equal access to feed and water. Sheep and lambs that can't eat or drink in sufficient quantities are more susceptible to disease.
- Properly sanitize all equipment, especially when moving between healthy and sick animals.
- Control rodents and insect populations to keep them from spreading disease.

BREEDING AND REPRODUCTION MANAGEMENT

- Ewes should have clean udders to reduce the risk of infection to newborns.
- Keep lambing ewes separate from mature ewes. Make sure afterbirths and abortions are removed and the area is cleaned and disinfected.
- Lambs that do not feed naturally require bottle-feeding. Make sure bottles and other equipment are cleaned and sanitized thoroughly and often to prevent the transfer of pathogens between lambs in a litter and amongst lambs relying on bottle-feeding.



Movement and isolation checklist

SHEEP

A disease outbreak in your flock can result in losses and increased costs. Follow these guidelines when introducing new animals onto your farm – and reduce the risk to your flock by helping to keep disease out.



ONTARIO
Sheep
MARKETING AGENCY



Lower the risk of disease transmission in your flock:

- Do not transport unfit animals.
- Know the disease status of animals you're bringing onto your farm.
- Clean and disinfect transport trucks and trailers in between loads or ensure that your transporter has an appropriate protocol in place.
- Keep new animals away from your flock upon arrival. Observe them carefully to monitor their response to the new farm site.
- Treat and vaccinate sheep of unknown health status when they arrive on your farm.
- Keep your production areas clean and dry to avoid spread of disease.
- Commingle new arrivals outside of breeding, gestation or lambing periods to make it easier for them to acclimatize and develop immunity.
- Isolate sick animals away from the main flock.
- Implement enhanced biosecurity between sick pens and/or quarantine areas and the rest of the flock.
- Avoid direct contact between sick and healthy animals within a group or between adjacent pens.
- Ensure healthy and sick sheep do not eat or drink from the same feed or water sources.
- Keep lambing out of mature ewe pen areas to avoid exposing newborns to potential pathogens.
- Keep farm cats out of the barns and production areas as they can spread disease.
- Clean and disinfect equipment or people that come into contact with animals.
- Provide training for your staff on biosecurity protocols.

For more information, visit www.agbiosecurity.ca or contact the Ontario Sheep Marketing Agency at 519-836-0043 or general@ontariosheep.org.

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