



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.

Building Better Lambs 1: Using 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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