



## What are ultrasound measurements?



*Is there an efficient way to improve carcass quality? Yes, there is!!! Measurements of muscle thickness and fat cover on a living animal can be taken using ultrasound.*

*The selection and the use of evaluated animals for their butchering qualities presents an interesting option for breeders who want to produce good quality market lambs. Good butchering qualities mean animals whose offspring will have good growth, good muscle depth and adequate fat cover. Using these animals will increase the quantity (in kg) of lean meat sold, which then will improve the average index of carcasses on the market.*

### **How to select to get more meat?**

The GenOvis program can help you make good choices. The Terminal index allows breeders to select the best animals to produce offspring that will have improved lean meat growth. Ultrasounds are used to measure loin eye thickness and back fat thickness on living animals. A genetic value based on these measurements is calculated and selection can then be done to improve your lambs' carcass quality.

### **Which animals should be evaluated?**

- All lambs in a management group should be measured (males and females);
- The measurement should be taken at the 100 day weighing (between **70 to 120 days, maximum is 135 days**), ideally when the **average weight** of the group is around **35kg**;
- The Terminal selection index is used to select terminal breed animals;
- The Maternal Terminal selection index is used to select maternal breed animals.

We recommend measuring lambs when they reach a weight of **30 kg or more**. Lambs that weigh less than 30 kg are at a disadvantage compared to heavier lambs as their adjusted values tend to be underestimated. In addition, it is difficult to see the differences between very thin lambs, so accurate genetic potential evaluations become more difficult to obtain. Also, lambs should be measured **before reaching 45 kg** because heavier animals have adjusted measurements that over-estimate the fat deposition and under-estimate the loin eye thickness. The adjustment factors for loin eye and dorsal fat thickness are based on a 35 kg weight hence the recommendation that lambs be evaluated at this average weight.

It is also strongly recommended to measure lambs **after 100 days** of age, except for fast growing breeds that reach their slaughter weight quickly. There is enough variation between lambs at this age **to obtain an accurate genetic evaluation**.



Do not forget that males tend to deposit fat later – measurements taken too early will under-estimate the fat deposit on males. Also, animals evaluated too early have not yet reached their full growth potential and the genetic program may underestimate their true potential.

### Who takes these measurements?

Visit our website [www.genovis.ca](http://www.genovis.ca) in the Ultrasound Measurements section to access the list of accredited technicians in your area. Accredited technicians receive specific training to standardize the procedure and to ensure the quality of data collection.

A breeder having interest in ultrasound measurement should contact the accredited technician in the area (for Quebec, contact CEPOQ). The 50-day weight data should be provided to GenOvis in order to facilitate planning the measurements by the technician (to schedule the date and the number of lambs to evaluate). The technician will then contact the breeder to schedule a measurement time, explain how to install the work site and how the measurements will be taken. Following the visit, the technician will send all collected data to GenOvis at CEPOQ. The data will be entered into GenOvis and an ultrasound measurement report will be produced.

### Is the work site complicated?

A well-organized work site will facilitate and accelerate the measurements. In accordance with the efficiency of the work site, the technician is able to measure 12 to 20 lambs per hour. Before the technician comes, all the lambs to be measured should be grouped together and isolated. A trim table is ideal for restraining the lamb otherwise a person will have to hold the lamb. When a third person is available, they can take note of the measurements to speed up the process. The 2<sup>nd</sup> and 3<sup>rd</sup> visits will be more efficient than the first!!

### Did you know...

- Paternal breed selection based on growth potential is far from being perfect?

*"The genetic **correlation** between **growth and muscle thickness** is **slightly negative**. If the selection is simply based on growth, animals will progressively have lower carcass quality." (Chesnais 2002)*

- Can selection based only on muscle thickness have a negative effect on bone structure and fat cover?

*Effectively, there is a **positive correlation** between **muscle thickness and fat deposition**. This means by selecting only on muscle thickness, the carcass will be fatter. In addition, an Australian study has shown that selection based solely on loin eye thickness (muscle) gave rise to a shortening of leg bones and a weakening of the skeleton in general (Coke et al., 2007).*