All You Need to Know About Ultrasound Measurement Services

The genetic potential of an animal to produce offspring having high quality carcass composition can be evaluated using ultrasound measurements. Ultrasound technology is used to measure the thickness of the loin eye and back fat of a live animal. Ultrasound measurements are processed in the GenOvis genetic evaluation program. They are used to produce EPDs related to loin eye and fat traits, but mainly to generate the CARCASS, MATERNAL ULTRASOUND and MATERNAL ULTRASOUND HIGHER PROLIFICACY indexes. These indexes allow breeders to select the animals having the best genetic potential to produce lamb carcass that will satisfy market needs.

Preliminary Steps
What to do before the technician arrives?

- **DATA COLLECTION.** First, collect the lambing information and record it in the GenOvis program, or send it to the data entry service. These records can be entered in *electronic format (Excel)* or directly on the *GenOvis online program.* It is also possible to send paper records, but additional fees apply.
- **REQUIRED INFORMATION.** The minimum information needed (maximum of 15 days after the 50-day weights are collected): lambing period (start and end dates), number of lambs to be measured, breed and date of the 50-day weights were taken. *Lambing data and 50-day weights should be entered into GenOvis prior to sending a request for ultrasound measurement.*
- **AGE OF ANIMAL.** The lambs must be scanned between 73 and 135 days of age with an average weight of 35 kg or more. It is ideal to take ultrasound measurements at the same time as the 100-day weights in order to minimize animal handling and producer workload.
- **WARNING.** Lambs scanned too young are generally lean and their musculature is not developed. It is then difficult to note differences in fat and muscle between the lambs. The genetic values obtained on young animals are less accurate and less reliable.

Appointments must be made as soon as the births are completed and the 50-day weights has been entered (maximum two weeks after the 50-day weighing). This allows the technicians to better plan their visits.

Quebec: contact the GenOvis data entry service; they will contact the technician of your area

Maritimes: contact the CDPQ (cdpq@cdpq.ca)

Other provinces: contact the GenOvis data entry service; they will indicate you the coordinates of the technician of your area

View the video "MESURES ULTRASONS" at : www.genovis.ca (in French)

Workplace Set Up

In order to prevent wasted time, preparation of the workplace must be carried out before the technician arrives. Lambs must be ready close to the technician's workspace. Lambs may be held in a corral, restraining corridor or a waiting area where they are easily handled.

Shaving the measurement site allows good contact between the probe and the animal. Good contact occurs when minimum pressure is exerted, which ultimately creates a better-defined image. **It is impossible to get good quality images without shaving the ultrasound site.**

On-farm Measurements

- **BREEDER MUST BE PRESENT.** The presence of the breeder is essential to ensure proper handling of the lambs. The animal should be in a normal position (raised head, straight back and four legs well positioned). It must be calm and immobile. Proper positioning allows for higher quality images to estimate the real thickness of loin eye and back fat.

- **RESTRAINT OF THE ANIMAL.** In order to keep the animal immobile and calm, various working tools can be used, such as: the restraining cage, the sheep restraint table (for trimming hooves) or any other type of specialized table allowing suitable restraint. The breeder may also hold the animal while the technician takes measurements.

- **WEIGHING AND SHAVING.** The lamb is weighed and then the technician shaves the site prior to taking ultrasound measurements. The site lies between the 3rd and 4th lumbar vertebrae (halfway between the last rib and the hip bone). The image is taken perpendicular to the spine.

- **DATA COLLECTION.** Measurement is carried out using an ultrasonic probe. Gel or vegetable oil is applied to the skin of the animal in order to obtain a clearer image. Depending on the facility and the number of handlers, it is possible to measure between 20 and 25 lambs/hour.

- **MANAGEMENT GROUP.** It is recommended to scan all lambs in a group, as the performance of each animal is compared with those of its contemporary group. This makes it possible to better estimate performance due to genetics while excluding those due to environmental effects. The resulting genetic evaluations are more precise and more reliable. Animals that are sick or in poor condition (thin, dehydrated, obvious lack of development) should not be measured because they have not been able to demonstrate their full potential, which will affect their genetic evaluation.

- **DATA ENTRY.** The technician records the values of the thickness of the loin eye and back fat, as well as the weight of the animal. These records must be entered into the GenOvis program in order to obtain the necessary genetic evaluations to guide the breeders in their selection process.

  Quebec: Recorded by the GenOvis data entry service
  Maritimes: Recorded by the CDPQ ultrasound technician
  Other provinces: Look with the technician in your area

*Ask for **an accredited technician**. Any technician accredited to perform scanning of the loin eye and back fat in sheep provides a professional service that respects on-farm biosecurity rules.*

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