Carcass Trait EBVs

What They Do:

Estimated breeding values based on carcass measurements evaluate the genetic potential for improved muscling and carcass fat covering. The postweaning backfat thickness (PFAT) evaluates degree of fat deposition, while the postweaning eye muscle depth (PEMD) evaluates the development of the ribeye muscle. Carcass Trait EBVs are standardized to a common live body weight of 121 lbs (55 kg). Loin eye area, closely correlated with eye-muscle depth, is considered highly heritable, so rapid genetic improvement is possible with consistent selection pressure.

How to Measure:

Carcass measurements are made using ultrasound technology at 90 - 150 days of age and lambs must be both weighed and scanned on the same day. Ultrasound carcass measurements are taken by a certified technician using approved equipment. To permit proper imaging, Katahdin sheep will need to have a small patch of hair clipped to the skin. A 3.5 MHz transducer with gel standoff is placed at the intercostal space between the 12th and 13th ribs near the spine. Once a suitable image has been obtained, measurements are made on the image of backfat thickness and eye muscle depth.

How They Are Applied:

Carcass Trait EBVs are measured in millimeters above (+) or below (-) the breed average for that trait. For example, a breeding ram with a PEMD EBV of 0.9 has the genetic potential for a 0.9 mm thicker ribeye muscle at postweaning than the average for the breed. Because a lamb inherits half of its genetics from its sire, its offspring are expected to be 0.45 mm thicker than the breed average. Ribeye muscle area and depth are correlated and since depth is easier and more repeatable to measure, NSIP uses depth to more accurately calculate EBVs. Currently, the 50th percentiles for both traits among Katahdin lambs are negative suggesting that most lambs lack the genetic potential to significantly increase either PEMD or PFAT. Increasing PEMD has obvious advantages for any meat breed, but fat cover too may be beneficial in maintaining carcass freshness. Interested producers should thoroughly consider the pros and cons of selecting for greater fat cover in Katahdins, especially in flocks that finish lambs in forage-only systems. As part of a process of balanced trait selection, acquiring sires that possess positive EBVs for both carcass traits should lead to improved carcass quality at slaughter.

Things to Consider:

Measuring carcass traits via ultrasound requires significant skill and practice to be both accurate and precise. Also, the ultrasound equipment needed to conduct high resolution scans may be cost prohibitive. Producers may instead choose professional technicians who are NSIP certified to visit their farm and scan lambs on a per head basis. Another option is to have the scans done by a non-certified scanner and analyzed at the certified CUP lab in Ames, Iowa. A list of certified technicians is available through the following link: http://nsip.org/wp-content/uploads/2019/05/Ultrasound-certified-scanners-2019.pdf. Currently, too few Katahdin producers collect scanning data to create sufficient genetic linkages, thus limiting Carcass Trait EBVs to within-flock comparisons. Some producers may receive Carcass Trait EBVs for their animals even though their sheep were not scanned. These pedigree averages are based on data from relatives and should be considered less reliable than measurements taken directly on an individual animal.