Recording and reporting scanning data for NSIP/LAMBPLAN

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When to scan lambs

LAMBPLAN assumes that lambs will be weighed and scanned on the same day. Current age windows for reporting body weights are:

- Weaning weight   42 to 90 days
- Early postweaning weight   91 to 150 days
- Postweaning weight   151 to 304 days
- Yearling weight   305 to 426 days
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Only a single measurement date, a single weight, and a single scan can be reported for each age interval. Lambs should thus be scanned at the same time they are weighed, or at least within a few days (probably 1 week or less). Weaning scans can be reported but are not currently used to produce EBVs, because scans taken at young ages are considered less reliable and more likely to be affected by maternal traits.

For terminal or dual-purpose breeds (Suffolk, Hampshire, Shropshire, and Dorset), lambs should be weighed and scanned in the early postweaning weight interval (91 to 150 days). A postweaning scan (151 to 304 days) may also be reported, either in addition to an early postweaning scan or, if necessary, as an alternative to the early postweaning scan. Yearling scans can also be reported and are used for calculation of EBVs, but are considered less informative than scans taken closer to target market weights.

For extensively-managed western range breeds (Targhee, Rambouillet, and perhaps Columbia) that are developed less rapidly prior to weaning, scans taken at postweaning ages (151 to 304 days) appear to be more informative than early postweaning scans and are recommended. Yearling scans can also be reported for these breeds but are recommended only in addition to a postweaning scan. Further research is needed to make better recommendations for optimal scanning ages for these breeds and will be carried out as additional scanning records are submitted.

Scan technician certification

LAMBPLAN requires that scan measurements be collected by a certified scan technician in order to be eligible for evaluation. For U.S. data to qualify for across-flock evaluation, scanning must likewise have been conducted by a certified technician. A list of certified U.S. technicians is available at www.nsip.org, and efforts to train and certify additional technicians are ongoing.

What to measure

All scan traits currently being considered are measured between the 12th and 13th ribs. Traditionally, U.S. scan technicians have measured backfat thickness (in) and loin eye area (in^2). LAMBPLAN EBVs for scanning traits include fat thickness (mm) and eye muscle depth (mm) reported as *pfat* and *pemd*, respectively. All measurements must be converted to metric units before entry into Pedigree Wizard!

In cases where only muscle area was measured, eye muscle depth in mm (EMD) can be predicted from traditional loin eye area measures in square inches (LEA) as follows:

$$EMD(mm) = 0.754 \times LEA(in^2)^{0.586} \times 25.4$$

This equation has been found to be reasonably accurate for both male and female lambs of the most commonly scanned breeds (Suffolk, Hampshire, Shropshire, Dorset), provided they are measured within the acceptable early postweaning age window (91 to 150 days).

Reporting scanning data and EBVs

LAMBPLAN EBVs for *pfat* and *pemd* are adjusted to a constant live weight of 55 kg (121 lb). When advertising breeding stock, report EBVs when available. Although seedstock buyers are currently less familiar with the metric system and loin depth, EBVs are a far more accurate assessment of an animal's genetic merit than raw measures. If you wish to convert scanning EBVs to Imperial units, you should show both the metric ("official") EBVs and the converted values.