



South Dakota 4-H Lamb Carcass Evaluation Program



Purpose of the program

- Provide youth and their families with an educational experience that enhances the 4-H sheep project experience.
- Create awareness of current lamb carcass qualities demanded by the industry and the consumer.
- Identify selection, breeding, nutrition, and management practices that result in superior lamb carcasses.
- Improve the educational value of youth shows and recognize exhibitors for producing high-value carcasses.

Eligibility for the South Dakota 4-H Lamb Carcass Evaluation Program

Minimum weight. Any lamb shown in the State Fair 4-H Market Lamb Show that weighed at least 105 pounds at State Fair weigh-in.

Carcasses eligible for ranking and cash awards must meet the following criteria

Fat depth at the 12-13th rib. Must have at least 0.10 inch fat depth (12th-13th rib).

Quality grade. Low Choice through High Prime (Ch- to Pr+).

Carcass acceptability. Carcasses must have acceptable color, firmness of fat and lean, and be free of defects that may significantly reduce carcass value. Those carcasses which fail to meet these conditions will not be graded by the USDA federal grading service. Non-graded carcasses will not be eligible for ranking or cash awards.

Procedure and definition of terms used in the program

Initial live weight. Weight recorded for State Fair entry.

Hot carcass weight. Dressed carcass weight immediately after processing, prior to chilling.

Dressing percent. (hot carcass weight | initial live weight) x 100. For freshly shorn lambs, we would expect the dressing percent to be 53-55%.

Fat depth. Measured between the 12th and 13th rib over the mid-point of the ribeye muscle perpendicular to the outside surface of the fat (see Fig 1).

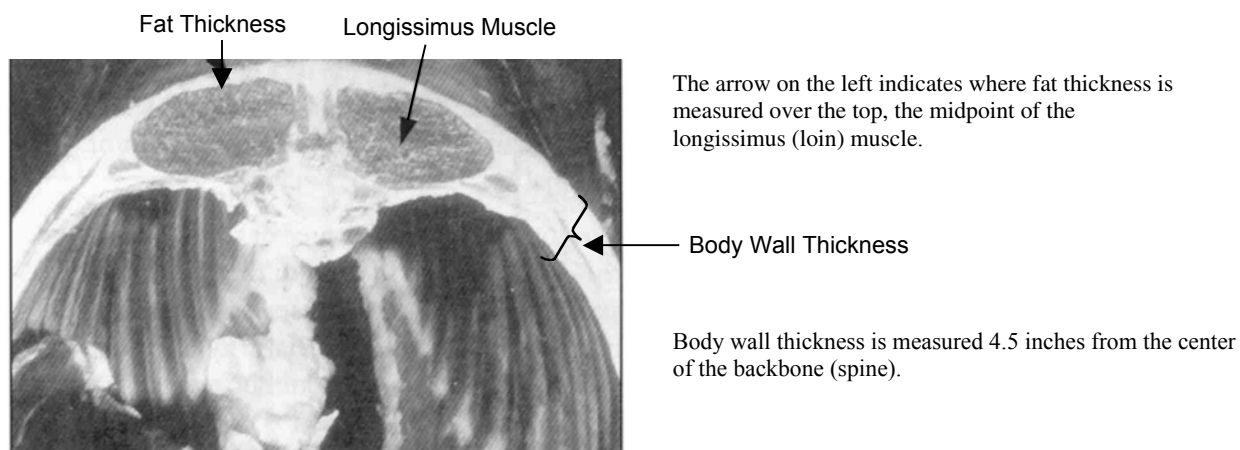
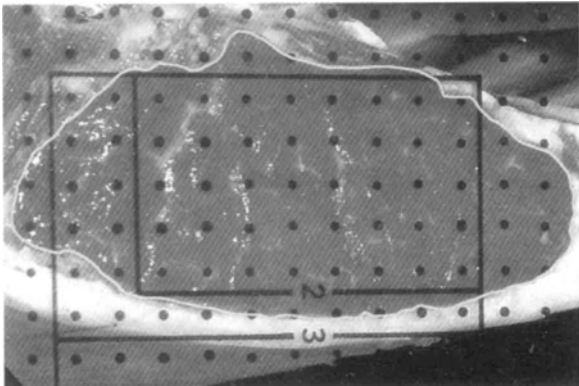


Figure 1

Photo from 4-H 194R OSU Sheep Resource Handbook.

Body wall thickness. Measured between the 12th and 13th rib, 4.5 inches from the center of the backbone (spine). This measurement is used as an adjustment for unusual distribution of fat on the carcass; it is an excellent predictor of carcass lean (see Fig 1).

Ribeye area. The ribeye area is the cross-sectioned area of the ribeye muscle (longissimus). This measurement is also take between the 12th and 13th rib (see Fig 2).



Loin eye with a lamb grid placed over it. Each dot equals 0.05 square inch, including those on the edge. Actual size of this loin eye is 3 square inches.

Figure 2

Photo from 4-H 194R OSU Sheep Resource Handbook.

Yield grade. Value determined by a formula using fat depth. Carcasses with a lower yield grade number will yield higher percentage of edible lean (meat).

Yield grade = 0.4 + (10 x adjusted fat depth, in.).

| <u>USDA Yield Grades</u> | <u>Adj. Fat Depth (12th-13th rib)</u> |
|--------------------------|---|
| YG 1 | .00 to .15 in. |
| YG 2 | .16 to .25 in. |
| YG 3 | .26 to .35 in. |
| YG 4 | .36 to .45 in. |
| YG 5 | .46 and greater |

Quality grade. An evaluation of the carcass quality or palatability characteristics of the lean and conformation of the carcass. Over 95% of all lamb carcasses are graded as Choice or Prime, the remaining grades are Good and Utility. Each grade has a high, average, and low designation: low choice = Ch-, average choice = Ch°, high choice = Ch+; similar designation for the other grades. Prime lambs have no advantage over Choice lambs because there is little improvement in eating quality.

Boneless, closely trimmed, retail cuts (BCTRC). The final carcass rank is determined by the percent (%) boneless, closely trimmed (.1 in.) retail cuts (BCTRC). Four carcass measurements are used in the formula to calculate the % BCTRC. They are carcass weight, fat depth, body wall thickness, and ribeye area. The formula is:

$$\%BCTRC = 49.936 - (.0848 \times \text{hot carcass weight}) - (4.376 \times \text{fat depth}) - (3.530 \times \text{body wall thickness}) + (2.456 \times \text{ribeye area})$$

Here is a simplified way to understand how these carcass measurements affect the % BCTRC.

Carcass weight: Lightweight carcasses have an advantage over heavy carcasses when ribeye area is equal.

Fat depth: Less fat depth (min. 0.1 in.) is more desirable compared to greater fat depth.

Body wall thickness: A lower measure is more desirable since the percentage of edible lean would be higher.

Ribeye area: A larger ribeye has an advantage over a smaller one, especially when comparing carcasses of equal weight.

For a carcass to have a **high %BCTRC value**, it likely would be **lean and heavy muscled**.

Therefore, the fat depth and body wall thickness measurements would be lower than average and the ribeye area significantly greater than average. When comparing carcasses of equal weight and the same fat measurements, fat depth, and body wall thickness, those with larger ribeye areas will generate the highest %BCTRC values.

Rules of the program

The 4-H member designates lamb for evaluation at time of showing lamb(s) at the State Fair.

Both market ewe and wether lambs are eligible.

Only 4-H market lambs shown in the regular 4-H lamb show are eligible for participation in this program.

4-H members will receive lamb carcass data sheets on all lambs evaluated and a letter explaining the lamb carcass data.

Estimated cost per lamb to participate in this program will be \$5.00. (Cost covers carcass data collection and postage fees.) This fee is deducted from the settlement checks.

Sponsors will provide cash awards on the top 20 lamb carcasses. Lambs will be ranked solely on carcass merits using %BCTRC.

Bid price will be established prior to the market lamb show.

Payment for each lamb is determined on a live basis. The initial live weight is multiplied by the \$__cwt. or 0.__ cents per pound.

The 4-H member will receive a lamb check(s) approximately 2-3 weeks following State Fair.

Sponsorship of cash awards

The South Dakota Sheep Growers Association sponsors cash awards for the top 20 4-H lamb carcasses entered in the evaluation program.

| <u>Placing</u> | <u>Cash Award</u> |
|--|-------------------|
| 1 st | \$50 |
| 2 nd | \$40 |
| 3 rd | \$30 |
| 4 th and 5 th | \$25 |
| 6 th thru 10 th | \$20 |
| 11 th thru 16 th | \$15 |
| 17 th thru 20 th | \$10 |

Those receiving a cash award should send a thank you letter to:

South Dakota Sheep Growers Association

Attn: Jeff Held, SDSU Extension Sheep Specialist

Box 2170

Brookings, SD 57007

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