



## Texas Tech University

### Pork Carcass Data Collection

#### Measuring Carcass Traits

##### Fat Depth Measurements

1. Divide the longissimus muscle at the 10<sup>th</sup> rib.
2. Measure the fat depth  $\frac{3}{4}$  the distance along the muscle to the nearest .05 inch. Make sure it is perpendicular to the outer skin surface.
3. If the carcass has been skinned add .1 inch to the depth measurement.

##### Loineye Area

1. Cut the untrimmed carcass perpendicular to the backbone between the 10<sup>th</sup> and 11<sup>th</sup> ribs.
2. Saw through the vertebra and then continue the cut with a sharp clean knife.
3. Stop your cut approximately 1 inch past the loineye.
4. Measure the loineye area in .05-square-inch units using a plastic grid.

##### Visual Carcass Muscling Score

Make every effort to minimize the effects of fatness when assessing muscling scores.

| Score 1 = Thin  | Score 2 = Intermediate  | Score 3 = Thick   |
|---|---|---|
| Carcass is angular in shape. The hams are tapered and narrow in appearance and lack bulge and thickness. The muscle to bone ratio is low. | Carcass would look intermediate between Scores 1 and 3. Most carcasses are within this range. | Carcasses are bulging in appearance. The hams and shoulders are significantly thicker (due to muscle, not fat) than the loin region. They are convex in shape and the muscle to bone ratio is high. |

##### Last Rib Fat Thickness (LRFT)

1. Measure, to the nearest .05 inch, perpendicular to the outer skin surface.
2. The measurement should include the skin, and both the first (outer) and second (middle) layers of fat exposed on the split of the backfat adjacent to the last rib.
3. Make sure not to include the connective tissue layer next to the vertebrae.

### Carcass Length

1. Measure (to the nearest .1 inch) the length in as straight line as possible.
2. Start at the cranial (anterior) tip of the aitchbone and measure to the cranial edge of the first rib and next to the thoracic vertebra.

### Adjusted Hot Carcass Weight

1. This measurement is for the hot carcass weight of the pork carcass if the skin is attached and no dressing defects have occurred.
2. If trim loss is estimated to be less than 5%, estimate the amount missing and adjust the hot carcass weight.
3. Adjust skinned carcasses to a skin-on basis by dividing the hot carcass weight by .94.
4. If chilled rather than hot carcass weights are used, divide the chilled weight by .985 (or provide a value by the plant that reflects the shrinkage during the initial chilling).

### Determination of Quality Grade

1. Evaluate the color of the lean in the skirt, primary flank, secondary flank, intercostal muscles, lumbar lean surface and Semimbranosus surface of the ham. Acceptable quality for the numerical grades is grayish-pink to moderately dark red color.

| <b>Score</b> | <b>Color Standards</b>     |
|--------------|----------------------------|
| 1.0          | Pale pinkish gray to white |
| 2.0          | Grayish pink               |
| 3.0          | Reddish pink               |
| 4.0          | Dark reddish pink          |
| 5.0          | Purplish red               |
| 6.0          | Dark purplish red          |

2. Evaluate the thickness and firmness of the belly. Minimum acceptable quality for the numerical grades is slightly thick (at least .6 inches in thickness), slightly firm, not soft or oily, and suitable for bacon production.

### Determination of Acceptable or Unacceptable Quality

1. Quality of lean is best evaluated by the direct observation of the characteristics of the loineye muscle at the 10<sup>th</sup> rib.
2. For carcasses with minimum acceptability of lean quality the cut surface will be slightly firm, have a slight amount of marbling, and be grayish-pink to moderately dark red in color.

3. If a cut surface is not available to determine quality acceptability, this can be determined indirectly using firmness of fat and lean, amount of feathering between the ribs and color of lean.
4. For intact carcasses the minimum acceptability is indicated by a slight amount of feathering between the ribs, fat and lean that is slightly firm and a grayish-pink to dark red color.
5. Belly thickness must be slightly thick with a minimum of .6 inches of thickness at any point.
6. Color, texture and exudation groups:

| <b>PSE</b>                                      | <b>RFN</b>  | <b>DFD</b>  | <b>NFN</b>   |
|---|---|---|--|
| Pale pinkish-gray, very soft, and exudative.    | Reddishish-pink, firm, and non-exudative.             | Dark purplish-red, very firm and dry.                 | Reddish-pink, firm and non exudative.                    |
| Undesirable appearance and shrinks excessively. | Desirable color, firmness and water-holding capacity. | Firm and sticky surface, high water-holding capacity. | Firm, fine texture with a normal water holding capacity. |

#### Assignment of the Numerical Grade

1. 1,2,3 or 4 preceded by the quality designation, U.S.; U.S. Utility carcasses are not assigned cutability grades.

| <b>Grade</b> | <b>Yield</b>           |
|--------------|------------------------|
| U.S. No. 1   | 60.4 percent and over  |
| U.S. No. 2   | 57.4 to 60.3 percent   |
| U.S. No. 3   | 54.4 to 57.3 percent   |
| U.S. No. 4   | Less than 54.4 percent |

2. Measure the fat thickness opposite the last rib in inches (including the skin).

| <b>Preliminary Grade</b> | <b>Fat Thickness Range</b> |
|--------------------------|----------------------------|
| U.S. No. 1               | Less than 1.00 inch        |
| U.S. No. 2               | 1.00 to 1.24 inches        |
| U.S. No. 3               | 1.25 to 1.49 inches        |
| U.S. No. 4               | 1.50 inches and over*      |

\* Carcass with last rib fat thickness of 1.75 inches or over cannot be graded U.S. No. 3, even with thick muscling.

3. Evaluate the degree of muscling by appraisal of the muscle to bone ratio in the ham, loin and shoulder regions and assign a muscling score (thin = 1, average = 2, thick = 3).
4. Using the last rib fat thickness (LRFT) and muscling score, calculate the numerical grade by the following formula:

$$\text{Carcass Grade} = (4.0 \times \text{LRFT}) - (1.0 \times \text{Muscling Score})$$