# Weber County Jr. Livestock Carcass Contest
## Goats

## Scoring Components

| Carcass Merit Indicators | Formula |
|---|---|
| **Yield Grade** | **Yield Grade = 0.4 + (10 × Back Fat)**<br><br>This formula estimates the USDA Yield Grade for goats. Lower yield grades indicate leaner carcasses and a higher proportion of usable product. Back fat is measured in inches using ultrasound. |
| **Pound Product** | **Pound Product = 2.5518 + (0.1963 × Final Weight) + (5.2096 × Loin Area)**<br><br>This formula estimates the total pounds of retail product in the goat carcass using ultrasound measurements. The constants were determined through regression analysis comparing ultrasound data (live weight and loin eye area) with actual carcass data. More final weight and a larger loin eye area both contribute to a higher predicted lean meat yield. |
| **% Product Live Weight (Dressing Percentage)** | **% Product Live Weight = (Pound Product / Final Weight) × 100**<br><br>Expresses how much of the live goat becomes usable product. It's especially useful for comparing goats of different sizes. |
| **% Lean Retail** | **% Lean Retail = % Product Live Weight / 0.5**<br><br>This gives the percentage of the goat's live weight that ends up as lean retail product. Higher values reflect more efficient conversion of live weight into meat. Derived from industry dressing standards. On average, about 50% of a goat's live weight becomes usable carcass. By dividing the dressing percentage (% Product Live Weight) by 0.5, we get a scaled estimate of the total lean retail percentage. This helps better compare goats based on usable lean output. |

This contest gives 4-H and FFA members the opportunity to learn how ultrasound data is used to evaluate market goats for carcass quality and yield. The contest uses standardized industry formulas to estimate retail product value. At Weigh in Goats will be measured for the following; Final Weight, Back Fat thickness, and Loin Eye Area. Goats will be sorted by Percent Lean Retail (Highest percentage to Lowest)

## Relevant Resources

USDA Agricultural Marketing Service (AMS) – Guidance on goat carcass evaluation, yield indicators, and quality assurance.

Langston University Goat Research Extension – Leading research in meat goat performance evaluation and carcass merit.

Texas A&M AgriLife Extension Service – Youth livestock carcass evaluation resources and ultrasound protocol guidance.

National Goat Handbook (NCSU, Langston, Penn State, et al.) – Recommended practices for goat carcass value estimation.

American Boer Goat Association (ABGA) – Commercial meat goat evaluation guidelines.

National 4-H Livestock Judging Manual – Nationally accepted carcass evaluation practices for youth livestock programs.

## Example Calculation

| Goat Data | Step - By - Step |
|---|---|
| **Back Fat:** .18 in <br><br> **Loin Eye Area**: 1.8 in² <br><br> **End Weight**: 85 lbs. | • **Yield Grade:** <br> Yield Grade = $(10 \times 0.18) + 0.4 = 1.8 + 0.4 =$ **2.2** <br> • **Pound Product:** <br> Pound Product = $2.5518 + (0.1963 \times 85) + (5.2096 \times 1.8) = 2.5518 + 16.6855 + 9.37728 \approx$ **28.61 lb** <br> • **% Product Live Weight:** <br> % Product Live Weight = $(28.61 / 85) \times 100 =$ **33.66%** <br> • **% Lean Retail:** <br> % Lean Retail = $33.66 / 0.5 =$ **67.32%** |