Beef Carcass Grading Basics and 2020 Steer of Merit Program

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Common Carcass Grading Terms and Definitions:

- **Live weight**: how much the steer weighed (in pounds) at the fair
- **Hot carcass weight (HCW)**: how much the carcass weighed (in pounds) after harvest
- **Dressing percentage (DP)**: hot carcass weight divided by live weight, expressed as a percent. DP = (HCW ÷ LW) × 100%
- **Backfat**: external fat thickness (in inches) measured at the 12th rib, ¾ of the length of the ribeye from the spine
- **Kidney, pelvic and heart (KPH) fat**: estimate of the amount of kidney, pelvic and heart fat as a percentage of carcass weight
- **Ribeye area (REA)**: area of the ribeye muscle (in square inches) measured at the 12th rib
- **Ribeye area per hundred-weight (REA/CWT)**: ribeye area divided by hot carcass weight expressed as hundred-weight. REA/CWT = REA ÷ (HCW ÷ 100)
- **Yield grade (YG)**: equation based on balance between muscle and fat; ranges from 1 to 5
  - YG = 2.5 + (2.5 × backfat) + (0.2 × KPH fat) + (0.0038 × HCW) – (0.32 × REA)
- **Maturity**: classification of the age of the carcass; ranges from "A" (youngest) to "E" (oldest). 4-H and FFA carcasses shouldn't be older than "A"
- **Dark cutter**: beef exhibits a dark, purplish red to almost black lean color compared to a normal cherry red. This results from stress prior to slaughter and is a result of high muscle pH.
- **Marbling score**: numerical value representing the amount of intramuscular fat in the ribeye
- **Quality grade**: based on maturity and marbling; reflects flavor and tenderness of the beef. See Table 1.
- **Cutability**: equation similar to yield grade that estimates boneless, closely-trimmed retail cuts from a beef carcass
  - Cutability = 51.34 – (5.78 × BF) – (0.462 × KPH) – (0.0093 × HCW) + (0.74 × REA)

Table 1. Quality grades, marbling calls, and marbling scores for "A" maturity carcasses.

Quality Grade	Marbling Calls	Marbling Score
Prime+	Abundant	900-999
Prime0	Moderately Abundant	800-899
Prime-	Slightly Abundant	700-799
Choice+	Moderate	600-699
Choice0	Modest	500-599
Choice-	Small	400-499
Select+	Slight	350-399
Select-	Slight	300-349
Standard+	Traces	200-299
Standard-	Practically Devoid	100-199

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2020 MT Steer of Merit Standards

Item	Range/Standard
Hot Carcass Weight	650 – 950 pounds
Dressing Percentage	55 – 68%
Back Fat	0.20 – 0.60 inches
Ribeye Area	11.5 - 17.5 square inches
Yield Grade	≤ 2.99
Dark Cutter	No
Quality Grade	Choice$^-$ or better
Cutability	≥ 51%

After evaluation, carcasses are ranked by sorting the data in three steps:

1. Steer of Merit (Yes or No)
2. Price per hundred-weight (highest to lowest)
3. Cutability (highest to lowest)

In the Ultrasound Division, we assume a 62% dressing percentage, 2% kidney, pelvic, and heart fat, and no dark cutters.

Carcasses are priced based on a grid formulated from USDA data the third week of June each year. Grid prices for 2019 are listed below.

2020 SOM Carcass Pricing

Base Price	$153.88/cwt
YG 1	$3.79
YG 2	$1.68
YG 3	$0.00
YG 4	($11.21)
YG 5	($17.62)
Prime	$10.63
Ch$^+$/Ch^0	$3.50
Ch-	$0.00
Select	($9.91)
Standard	($21.27)
Dark Cutter	($29.64)

For example, a yield grade 3, Choice$^+$ carcass would be priced at $157.38/cwt ($153.88 + $0.00 + $3.50). Whereas, a yield grade 2, Select carcass would be priced at $145.65/cwt ($153.88 + 1.68 - $9.91).

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