

# Beef Pricing and Selection Example

**Objective:** To implement current industry pricing decisions based on carcass weight, USDA quality and yield grades, gender, muscling type, and (or) carcass defects in Ohio FFA General Livestock CDE.

**Background:** In today's cattle industry there are a variety of methods in which cattle producers can market their market cattle. Cattle can be sold on a live and carcass dressed basis, which is based on the average for the pen as a whole. The producer is not paid for quality grade or yield grade. However, when cattle are sold using a grid or grade and yield program, each individual carcass receives a price based upon its own merit. The major benefit of selling on grids includes potential for higher prices if cattle meet the quality specifications that bring premiums under the particular grid. Risks include cattle not having quality attributes that secure premiums. Cattle feeders considering selling on a grid must have some knowledge of the quality and yield grades and likely carcass weights of every animal. Almost 70% of market cattle in today's beef industry are marketed through a grid system.

## Class #1

Rank these live cattle based upon carcass value (per hundred weight) derived from the pricing structure provided on the pricing sheet.

Cattle #	Weight	Special	Quality Grade	Expected Carcass Specs	Yield Grade	\$/cwt
1	725		Select	HCW: 725 lbs REA: 11.5in <sup>2</sup> KPH: 4.0% BF: .64in		
2	720		Choice	HCW: 720 lbs REA: 13.8in <sup>2</sup> KPH: 3.0% BF: .35in		
3	675		Prime	HCW: 675 lbs REA: 11.5in <sup>2</sup> KPH: 4.0% BF: .65in		
4	960	Stag	Select	HCW: 960 lbs REA: 15.5in <sup>2</sup> KPH: 3.0% BF: .24in		

# National Carcass Premiums and Discounts for Slaughter Steers and Heifers

**Base Price: \$95/cwt**

	<i>Yield Grade</i>				
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<i>Quality</i>	<i>(\$/cwt Carcass)</i>				
<b>Prime</b>	8.00	7.00	6.00	-9.00	-14.00
<b>CAB</b>	3.00	2.00	1.00	N.A.	N.A.
<b>Choice</b>	2.00	1.00	BASE	-15.00	-20.00
<b>Select</b>	-7.00	-8.00	-9.00	-24.00	-29.00
<b>Standard</b>	-16.00	-17.00	-18.00	-33.00	-38.00

## *Carcass Weights*

550-749 lbs.	Base
750-950 lbs.	-4.00
Less than 550 lbs.	-19.00
Greater than 950 lbs	-19.00

## *Other*

Dark Cutter, etc.	-25.00
Bullock/Stags	-25.00

## 2 Options in Solving Beef Pricing and Selection Problem

### Option 1:

Cattle #	Weight	Special	Quality Grade	Calculated Yield Grade	Yield Grade	\$/cwt
1	725		Select	$YG=2.50 + (2.50*.64in) + (.20*4.0)+(.0038*725lbs)- (.32*11.50in^2)$	3.97	Price = \$95-\$9.00 \$86/cwt
2	720		Choice	$YG=2.50 + (2.50*.35in) + (.20*3.0)+(.0038*720lbs)- (.32*13.8in^2)$	2.31	Price = \$95+\$1.00 \$96/cwt
3	675		Prime	$YG=2.50 + (2.50*.65in) + (.20*4.0)+(.0038*675lbs)- (.32*11.50in^2)$	3.81	Price = \$95+6.00 \$101/cwt
4	960	Stag	Select	$YG=2.50 + (2.50*.24in) + (.20*3.0)+(.0038*960lbs)- (.32*15.50in^2)$	2.38	Price = \$95-\$19-\$8-\$25 \$43/cwt

### 5 Questions based on calculations

**Yield Grade =  $2.50 + (2.50*\text{Adjusted Fat Thickness, in}) + (.20*\text{Kidney, Pelvic, and Heart Fat \%}) + (.0038*\text{Hot Carcass Weight, lb}) - (.32*\text{Rib eye Area, in}^2)$**

**Carcass Price = (Base Price  $\pm$  grid adjustments  $-$ (applicable discounts))**

### Option 2:

## STEPS IN ESTIMATING LIVE YIELD GRADES

1. The preliminary yield grade is determined from the following table based on the estimated adjusted thickness of fat over the ribeye.

Fat over Ribeye (Back Fat)	Preliminary Yield grade	Fat over Ribeye (Back Fat)	Preliminary Yield Grade
0.2 inch	2.5	0.8	4.0
0.4	3.0	1.0	4.5
0.6	3.5	1.2	5.0

2. The adjustment for area of ribeye is based on the area of ribeye carcass weight relationship in the following table. For each square inch by which the area of ribeye is estimated to exceed the area shown for the estimated carcass weight, subtract 0.3 of a grade. For each square inch less than the area shown for the estimated carcass weight, add 0.3 of a grade.

Hot Carcass Weight	Required Area Of Ribeye	Hot Carcass Weight	Required Area Of Ribeye
350 lbs	8.0 sq in	650 lbs	11.6 sq in
400	8.6	700	12.2
450	9.2	750	12.8
500	9.8	800	13.4
550	10.4	850	14.0
600	11.0	900	14.6

- Note –The requirements increase 0.6 sq in every 50 lbs, or 0.3 sq in every 25 lbs, or 0.1 sq in every 8 lbs.

600-608 lbs = 11.0 sq in

617-624 lbs = 11.2 sq in

609-616 lbs = 11.1 sq in

625-633 lbs = 11.3 sq in

Formula:      (Required REA – Actual REA) X 0.3

3. The adjustment for estimated percent kidney, pelvic, and heart fat is made from the following table.

% Fat	Adjustment	% Fat	Adjustment
0.5	-0.6	3.0	-0.1
1.0	-0.5	3.5	0
1.5	-0.4	4.0	+0.1
2.0	-0.3	4.5	+0.2
2.5	-0.2	5.0	+0.3

4. Combine the preliminary yield grade and the adjustments to obtain the final yield grade.

### **EXAMPLE**

Steer 1: 0.64 in of back fat  
725 lb carcass  
11.5 sq in ribeye  
4.0% KPH fat

Step 1.

Determine Preliminary Yield Grade  
Using the table an animal with 0.64 in of back fat has a PYG of 3.5

Step 2.

Adjust for ribeye area.  
According to the table a steer with a 725lb carcass should have a ribeye area of 12.5 sq in. This steer has a 11.5 sq in REA.

Formula: (Required REA – Actual REA) X 0.3  
(12.5 – 11.5) X 0.3  
(1) X 0.3  
+0.3

Be sure to leave the negative sign so that you subtract when necessary.

Step 3.

Adjust for %KPH fat  
This steer has 4.0% KPH  
According to the chart, 4.0% KPH requires a +0.1 adjustment

Step 4

Calculate Final Yield Grade

Preliminary Yield Grade:	3.5	(From back fat)
REA Adjustment:	+0.3	
%KPH Adjustment	<u>+0.1</u>	
FINAL YIELD GRADE	3.9	

Step 5

Calculate the \$/cwt

Carcass Price = (Base Price ± grid adjustments –(applicable discounts))  
Carcass Price = \$95-\$9.00  
\$86/cwt

Step 6

Repeat the following steps for each the remaining market animals in the class.

- Note that either method can be used in solving these problems