



Your Link to

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The \$64,000 question

Which cattle make the most money? Any cattle feeder knows the two biggest factors are (1) the purchase price going in and (2) the price received for the finished animal. The next largest input cost after buying the steer or heifer is feed. Efficient cattle bought below the market and sold at the peak price when finished make the most. There you go. But no, it's not that simple. A lot of

other factors affect both in-price and out-price. A recent analysis of Iowa's Tri-County Steer Carcass Futurity (TCSCF) database of 10,000 market steers (n = 6,617) and heifers (n = 3,319) fed from 2009-2010 can tell us a few things about the importance of quality grade (QG) and yield grade (YG), carcass premiums and discounts, and their effect on profitability.

Heifers

The analysis sorted data into virtual matrix pens for profitability by QG and YG. Within heifers, the five most profitable categories were:

1. Prime, YG 2.50-2.99
2. Prime, YG 3.00-3.49
3. Premium Choice, YG 2.50-2.99
4. Prime, YG 3.50 or greater
5. Premium Choice, YG 3.00-3.49

Again, that seems simple enough. But let's look at how these "Elite 5" groups of heifers ranked in performance, carcass and other characteristics (see Table 1). There were 13 possible quality and YG combinations.

You could argue that average daily gain (ADG) is not a great indicator of profitability, but keep in mind the range in ADG in the top three profit groups was only 0.10. Not to downplay the effect of gain on profitability, but it may be less important than in- and out-price among grid-marketed cattle.

The highest-ADG heifers, grouped by quality and YG combination, were the premium Choice, YG 3.5 and higher heifers at 3.16 lb. But those heifers didn't make the top five virtual pens for profitability; they would have been in sixth place.

The table also lets us look at external fat end point. The optimal level in heifers would be about 0.54 inches (in.) at the 12th-13th rib, averaging out this group — right? It's not that simple, of course, but it could be a good place to start.

If finished much past that point, we're going to start getting too many overly fat carcasses, bringing discounts into play that may offset QG and YG premiums. But at less than 0.54 in., perhaps they don't have enough days on feed to express their potential to grade and capture premiums in the market.

Now, let's look at the QG/YG combinations of heifers that were least profitable (see Table 2):

1. Standard, YG 2.50-2.99
2. Select, YG 3.50 or greater
3. Select, YG 3.00-3.49
4. Select, YG 2.50-2.99
5. Low-Choice, YG 3.50 or greater

The bottom five categories made up 20.8% of the mix, whereas the top five made up 12.1%. That still leaves a huge chunk, 67.1% of the heifers that fit into so many virtual categories that space limits preclude discussion. But the biggest part were low-Choice, YG 3.0-3.49 (profit = \$79.67) or low-Choice, YG 2.5-2.99 (profit = \$108.41). Those two combinations made up more than half of that remainder; they represent the cattle in the middle of the bell-shaped curve.

Fat thickness end point in the least profitable groups averages 0.54 in., too. This underscores the fact that external fat can stay the same across profit groups; higher marbling scores from more intramuscular fat (IMF) result in higher quality grades and command higher premiums.

Table 1: The top five virtual pens of heifers by profitability

QG/YG combination	% of mix	Profit		Fat cover		Avg. daily gain		Final wt., lb.
		\$	rank	in.	rank*	lb.	rank	
Prime, YG 2.5-2.99	0.4	235.67	1	0.46	9	2.97	10/11	1,049
Prime, YG 3.0-3.49	1.3	162.98	2	0.53	5	3.07	4	1,100
Prem Ch, YG 2.5-2.99	3.2	123.35	3	0.44	10/11	3.06	5	1,142
Prime, YG ≥3.5	0.2	115.42	4	0.76	1	2.98	8/9	1,141
Prem Ch, YG 3.0-3.49	7.0	113.99	5	0.52	6/7	2.91	12	1,118

*Ranked from fattest to leanest.

Table 2: The bottom five virtual pens of heifers by profitability

QG/YG combination	% of mix	Profit		Fat cover		Avg. daily gain		Final wt., lb.
		\$	rank	in.	rank*	lb.	rank	
Standard+, YG 2.5-2.99	0.1	(89.08)	13	0.44	10/11	2.04	13	1,004
Select, YG ≥3.5	1.2	16.53	12	0.68	2/3/4	3.09	3	1,171
Select, YG 3.0-3.49	5.6	37.72	11	0.51	8	2.99	7	1,111
Select, YG 2.5-2.99	6.9	51.11	10	0.43	12/13	3.01	6	1,133
Low Ch., YG ≥3.5	7.0	72.51	9	0.68	2/3/4	3.14	2	1,170

Table 3: Profitability as it relates to fat cover and average daily gain in steers

QG/YG combination	% of mix	Profit		Fat cover		Avg. daily gain		Final wt., lb.
		\$	rank	in.	rank*	lb.	rank	
Prime, YG 2.5-2.99	0.1	210.80	1	0.40	11/12	2.85	13	1,221
Prime, YG 3.0-3.49	0.2	154.62	2	0.48	8	3.25	9/10	1,235
Prem Ch, YG 2.5-2.99	2.1	97.30	3	0.42	9/10	3.25	9/10	1,214
Low Ch, YG 2.5-2.99	20.4	96.44	4	0.42	9/10	3.28	7	1,217
Prem Ch, YG 3.0-3.49	2.6	82.01	5	0.50	5/6	3.20	12	1,213

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Steers

The five most profitable virtual steer groups, listed by QG and YG combinations were:

1. Prime, YG 2.50-2.99
2. Prime, YG 3.00-3.49
3. Premium Choice, YG 2.50-2.99
4. Low-Choice, YG 2.50-2.99
5. Premium Choice, YG 3.00-3.49

Wow — these look a lot like the heifers (see Table 3).

We’re seeing a little less fat thickness in the steers (simple average, 0.44 in.) that characterize the top profit groups. But there’s no question which cattle made the most money again — the higher-quality, premium-earning cattle. Four of the five virtual groups match the heifers, the exception being low-Choice, YG 2.5-2.99 steer matrix. They gained better than others in the top five, but lacked the quality grade to place higher for net profit.

The highest-gaining cattle in the steer group (ADG 3.58 lb.) were the Select, YG 3.5 and higher. Problem is, those cattle ranked 11th out of the 13 in profitability. The least profitable steers lost \$151.33, but those Standard, YG 3.0-3.49 cattle gained 3.29 lb. per day, kind of average for all steers, and more than the top five profit groups.

Prices in, profit out

The TCSCF data shows either an individual price paid or a value assigned to each upon delivery based

on USDA market grader or local auction price. Finished cattle are also sold individually, on a carcass-merit grid. Let’s look at the “in” values for the top five heifer and steer profitability groups (see Table 4).

No, the dates are not standardized; yes, the market prices change daily. So how can we say this is better than that? This is real-world data here; this is what happened, and comparisons are merely logical. Note that the heifers all fall in a pretty tight weight range of 595 lb. to 665 lb., a 70-lb. spread, but the steers fall into a narrower, 34-lb. spread. Price and delivery-date ranges are not very large, mostly delivered in August and September.

These cattle were all sold on a value-based grid to the same packer. If you are in the commodity business, perhaps this doesn’t affect your “average” price for any week. But it does point out an opportunity in the grid: Cattle that produce the kind of beef consumers most demand can make you more money.

That’s the simple secret to earning a fair price. Compare your cattle marketing standpoint to that of the wise, old grain dealer: “If you would like to buy good, clean, heavy, bright oats, you will have to pay a fair price. If you want the kind of oats that have already been run through the horse, then those are somewhat cheaper.”



Table 4: Profitability as it relates to “in” price of heifers and steers

	In price \$/cwt.	In wt., lb.	In price		Final wt., lb.
			\$/hd.	rank*	
Heifers					
Prime, YG 2.5-2.99	\$77.46	595	\$461.83	1	9-29
Prime, YG 3.0-3.49	\$76.94	622	\$478.99	2	7-7
Prem Ch, YG 2.5-2.99	\$78.56	687	\$536.32	11	8-5
Prime, YG ≥3.50	\$79.37	645	\$514.65	4	8-5
Prem Ch, YG 3.0-3.49	\$78.63	665	\$519.21	6	9-1
Steers					
Prime, YG 2.5-2.99	\$87.98	687	\$592.77	4	9-16
Prime, YG 3.0-3.49	\$87.54	660	\$578.17	1	6-13
Prem Ch, YG 2.5-2.99	\$85.74	684	\$584.23	2	8-14
Low Ch, YG 2.5-2.99	\$87.41	694	\$604.34	8	8-27
Prem Ch, YG 3.0-3.49	\$86.24	684	\$587.05	3	8-24

*Least to most expensive.