



# Fed Cattle Pricing: Grid Pricing Basics

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Recently there has been a greater emphasis on improving the quality and consistency of beef. Cattle producers, breed associations, feed suppliers, and beefpackers have all initiated value based pricing methods commonly referred to as grid pricing. While these various grid pricing schemes may differ substantially in the carcass traits they seek to reward or penalize, they all have one common feature: price is established on each individual animal based on carcass merit. This fact sheet introduces the concept of grid pricing and discusses several management and marketing implications if fed cattle are sold on a grid as compared to being sold on a live or dressed weight basis. Two additional fact sheets go into greater detail on: 1) base price considerations and premiums-discounts over time; and 2) risk associated with grid pricing and the value of information.

## Grid Pricing Mechanics

Packers claim to have used price grids for years and to a limited extent they are correct. However, in the examples presented later, some differences will be noted between what packers used for years and what they are using today. With most grids, price is discovered after animals have been slaughtered. There may be a few exceptions, but most grids are based on dressed weights for fed cattle. Unlike live weight pricing or dressed weight "in the beef" pricing where there is a single average price for the entire sale lot, a price is discovered for each animal with grid pricing. As a result, higher quality cattle receive higher prices and lower quality cattle receive lower prices, thereby improving pricing accuracy and rewarding cattlemen who market desirable types of cattle.

Most grids consist of a base price with specified premiums and discounts for carcasses above and below the base or standard quality specifications (see extension facts WF-560, Grid Pricing of Fed Cattle: Base Prices and Premiums-Discounts). Individual packers have developed their own grids with alternative base prices and varying premiums and discounts. Table 1 contains an example grid. It does not represent the grid for any specific packer. The premiums and discounts in Table 1 can be put into a matrix format. The term grid comes from the matrix framework of premiums and discounts for specified carcass characteristics. Quality grade and yield grade

**Table 1. Example Grid, as Presented by a Packer (\$/dressed cwt.)**

Choice YG3 550-950 lbs.	Base Price
Prime-Choice Price Spread	+6.00
Choice-Select Price Spread	-6.00
Select-Standard Price Spread	-10.00
Yield Grade 1	+5.00
Yield Grade 2	+3.00
Yield Grade 4	-20.00
Yield Grade 5	-25.00
Dark Cutters	-20.00
Light Carcasses (<550 lbs.)	-10.00
Heavy Carcasses (>950 lbs.)	-20.00

premiums and discounts compared with the base price are shown in the Choice row and yield grade 3 column of Table 2. To complete the matrix in Table 2, we assume Quality grade and yield grade premiums and discounts are additive. For example, the premium for a Prime grade, yield grade 1 carcass in Table 2 is \$11/cwt. That amount is the sum of the \$6/cwt. premium for Prime grade carcasses plus the \$5/cwt. premium for yield grade 1 carcasses.

For years, head buyers at meatpacking firms have developed a daily buy order, which is given to their field buyers to implement. Their order resembles the sample grid in Table 1. Most packers paid only small premiums for higher quality cattle and larger discounts for lower quality cattle. Grids or formulas used in recent years differ from previous years in that premiums for higher quality cattle are frequently much larger than before. Discounts for lower quality cattle may still be larger than premiums for higher quality cattle, but packers send clear signals with the grids used today compared to previous years. Packers want higher quality cattle because lower quality cattle have a considerably lower wholesale value and are much more difficult to market profitably. Discounts for lower quality cattle should be substantial.

Packer grids may identify additional premiums for carcasses meeting specifications of Certified Angus Beef (CAB) or other marketing programs. Likewise, packers may specify discounts for hide damage, injection site blemishes, condemnations, and other "out" or unmarketable carcasses

**Table 2. Example Grid in a Completed Matrix Format (\$/dressed cwt.)**

Quality Grade	Yield Grade				
	1	2	3	4	5
Prime	11.00	9.00	6.00	-14.00	-19.00
Choice	5.00	3.00	Base	-20.00	-25.00
Select	-1.00	-3.00	-6.00	-26.00	-31.00
Standard	-11.00	-13.00	-16.00	-36.00	-41.00
Dark Cutters		-20.00			
Light Carcasses (<550 lbs.)		-10.00			
Heavy Carcasses (>950 lbs.)		-20.00			

(in addition to discounts for dark cutters and light or heavy carcasses as shown in the sample grid).

To compute a grid-based price, the distribution of carcasses by quality grades and yield grades from a sale lot of fed cattle must be known. That distribution also is put into a matrix framework. A hypothetical distribution of carcasses for a 100-head sale lot of steers is shown in Table 3. Our hypothetical pen is a fairly typical pen of cattle (65% Choice and Prime quality grade) and (60% yield grades 1 and 2).

Once the base price is known for the grid in Table 2, the net price can be computed for a pen of cattle by multiplying the percent of carcasses in each matrix cell in Table 3 times each premium and discount cell in Table 2. For example, if the base price is \$110/dressed weight, then the weighted average price for the pen distribution in Table 3 is \$109.68/cwt. For our example, we assumed there were no "out" carcasses. The actual net price for a pen of cattle may vary somewhat from the calculated price because of differences in carcass weights for animals in each matrix cell.

A higher base price is probably more critical to receiving a higher net price from a grid than are the specific premiums and discounts. The base price affects all cattle in the sale lot, whereas premiums and discounts affect only selected carcasses.

**Table 3. Example Distribution of Carcasses by Quality and Yield Grades (100 Head Total).**

Quality Grade	Yield Grade					Total
	1	2	3	4	5	
Prime	0	1	5	3	0	9
Choice	6	23	26	1	0	56
Select	10	19	5	0	0	34
Standard	1	0	0	0	0	1
Total	17	43	36	4	0	100

## Grid Pricing Considerations and Management Issues

Perhaps the two primary implications of marketing fed cattle on a grid are:

- Cattle feeders MUST know their cattle quality; and
- Cattle feeders MUST know how the grid price is calculated.

Many producers do not know how their cattle perform in carcass form. Without knowing the carcass quality of their cattle, marketing on the basis of a grid may be disappointing. Grids can provide an incentive to market higher quality cattle. However, the penalty for not recognizing and marketing lower quality cattle is large. Even a few lower quality cattle, priced at large discounts to higher quality cattle, can offset the premiums for higher quality cattle. The bottom line results might be a price which is lower on average than a live weight or dressed weight cash price.

For example, in Table 3, there are 30 head of Prime and Choice, yield grade 1-2 carcasses. Together, using the grid in Table 2, they add a premium of \$1.08/cwt. to the base price. Also in Table 3 there are four yield grade 4 and 1 Standard carcasses. Together their discounts reduce the base price by \$0.73/cwt. Discounts from five lower quality carcasses nearly offset completely the premiums from thirty higher quality carcasses. Cattle quality significantly affects the bottom line price results when marketing by a grid method.

Cattle producers need to ask other questions. Do my cattle naturally fit the grid? Can they be fed to fit the grid? Can they be sorted to fit the grid?

Should pens of cattle be sorted to fit different grids or sorted to sell some cattle on the cash market? Sorting cattle to fit different grids may be economical provided a producer has a good idea how the different groups of sorted cattle will perform in carcass form. Sorting out lower quality cattle just before marketing them and mixing them with a pen of cattle sold on an average live weight or dressed weight price is a short-sighted approach to marketing. Profit from sorting may be higher for both pens, but over time, packers will likely bid lower for the cash market cattle. In addition, it fails to signal clearly the need to rid the industry of lower quality cattle, resulting in a continued loss of the consumers' food dollar and loss of market share for beef. However, sorting cattle earlier may enable the feeder to manage both pens of cattle to meet specifications in more than one grid. This management change may reduce feeding costs, increase returns, and enhance both short-run and long-run profitability.

Cattle have a natural, economical end feeding weight. This end weight or point varies by frame size, breed, genetics within a breed, and market prices for inputs and fed cattle. For example, one pen of cattle may produce carcasses averaging 850 pounds of dressed weight, which grade mostly Select yield grade 2. Another pen may produce carcasses averaging 700 pounds of dressed weight, and grade mostly upper Choice yield grade 3. With the first pen, a grid that pays a premium on yield grades 1 and 2, minimally discounts Select carcasses, and does not penalize heavy weight carcasses will likely be advantageous. For the second pen, a grid that pays a large premium for upper <sup>2</sup>/<sub>3</sub> Choice and Prime, does

not discount yield grade 3 carcasses, and has only a small discount on yield grade 4 carcasses will likely be advantageous. Feeding the pen of cattle that averaged 850 pounds of dressed weight for several additional days with the intent of improving quality grade probably will result in a significant number of heavy weight carcasses. The discounts for the heavy weight carcasses will likely exceed the added premium from improved quality grade.

Producers need to realize that if feeding and other management practices are altered, then receiving the highest price doesn't imply the greatest revenue, nor does the greatest revenue imply the largest profit. Revenue is price multiplied by weight [ $R=(p)(wt)$ ], and profit is revenue minus costs [ $p=R-c$ ]. To maximize profit on a pen of cattle, the selling weight and feeding costs need to be considered, in addition to the selling price.

## Summary and Conclusions

Grid pricing methods have become more common in recent years. Grids have the advantage of pricing each animal, thereby improving pricing accuracy. Cattle are paid on actual dressed weights and the base price is adjusted for various carcass traits. Better quality cattle are rewarded and poorer quality cattle are penalized.

Cattle producers need to know the quality of their cattle and how grid prices are calculated before knowing whether or not grid pricing will be advantageous for them. Producers also need to consider profit (cost and revenue) implications of attempting to adjust feeding period length to target specific grids. Grid pricing has definite advantages. However, cattle producers must understand them thoroughly to take advantage of the benefits and avoid the pitfalls.

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