



# Ranchers' Guide to Custom Cattle Feeding

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Custom cattle feeding refers to sending cattle to a commercial feedyard that specializes in feeding and managing cattle until they are ready for slaughter. A rancher should consider this practice as a marketing alternative or for market timing purposes. Custom cattle feeding can be used as a tool to increase the dollar return to a cow-calf or stocker program. However, there are times when it may be better to simply sell feeder cattle or calves. The rancher should consider custom cattle feeding at any time when it is likely to increase his net return.

Certain more progressive ranchers will feed some of their cattle each year regardless of profit potential, to see how their product stacks up with the industry in terms of feedlot performance and carcass evaluation. This may become more important as feeders or alliances require evidence of superior cattle performance before they are willing to pay top market price.

Cattlemen who would like to try cattle feeding, but are uneasy about sending a pen of 100 to 150 head to a feedlot for the first time, may want to look at a program such as the OK Steer Feedout, run by OSU Extension. Groups of five steers per ranch are fed together with all performance and carcass data collected. Contact your county Extension office or area livestock specialist for information.

## Selection of Cattle for Feeding

The key to successful feeding lies in the makeup of the cattle which constitute a pen. The cattle should be as uniform as possible in weight, body type, age, breeding, and in previous nutritional background. When these conditions are met, the cattle feeder can feed and sell the cattle to achieve optimum feed efficiency and market worth of the cattle. When this careful control is started on the producing ranch or county, the uniformity in the cattle can almost always be expected to achieve a five to ten percent advantage in efficiency over less uniform cattle.

Steers or heifers can be fed, but usually not in the same pen. Heifers are often discounted more as feeder calves in marketing channels than they should be, and custom feeding may be a means to realize better prices for the rancher. In recent years, the value of fed heifers has improved compared to steers, with both selling for the same price.

## How To Evaluate A Custom Feeding Opportunity

### Value Your Cattle

Put a realistic value on your cattle and calves at home. This is usually either the local auction price, less costs and shrinks involved in getting cattle to market, or a bid at your scales, less a possible pencil shrink.

Cattle shrink and pencil shrink are very important. When considering shipping cattle to custom feedlots with a ten-hour haul, it is likely they will shrink three to eight percent from ranch weights. Please refer to Table 1 to estimate cattle shrinkage.

**Table 1. Shrinkage loss due to different handling conditions.**

Conditions	Percent Shrink
8-hour drylot stand	3.3
16-hour drylot stand	6.2
24-hour drylot stand	6.6
8 hours in moving truck	5.5
16 hours in moving truck	7.9
24 hours in moving truck	8.9

### Example of figuring cattle costs:

A buyer offers you \$68.00/cwt for your steers with a three percent pencil shrink. In reality, he offered you 97 percent of \$68.00, or \$65.96.

You are considering placing a value on your cattle for custom feeding in a lot 300 miles from home. The cattle will shrink about 5.5 percent (from Table 1) from ranch weight during the haul. Thus, your cattle would have to cost \$69.80 [ $65.96 \times (100/94.5) = 69.80$ ] delivered to a feedlot to net you the \$65.96 at home.

Keeping records of a few actual shipments under your conditions will establish the appropriate percent shrinks for your operation.

### Freight Costs

Usually, a trailer equipped to handle cattle is the most economical way to move livestock. These trucks will haul from 48,000 to 52,000 pounds of cattle. Hauling rates range from \$1.90 to \$2.10 per mile. Usual current rates are about \$2.00 per mile to a custom feedlot. Shipment of cattle 300 miles with a 50,000-pound load will add about \$1.20/cwt to the cost of the cattle.

If you can get \$68.00 less three percent shrink at home, you can figure to deliver your cattle to a feedlot 300 miles away for \$69.80, plus \$1.20 freight, for a total of \$71.00.

### Feedlot Costs

Custom cattle feeders are in the business of providing feed, management, and other services to their customers at a certain price. An important part of evaluating a custom feeding opportunity is to project total feedlot costs. The total costs from initial feedlot weight to final "pay weight" is often referred to as "cost of gain."

“Feed cost of gain” refers to feed only costs divided by the total pounds of weight gain in the feedlot.

Cost of gain varies tremendously and is dependent on many factors, including initial health, condition (fleshiness), and genetic potential of the cattle, weather conditions during the feeding period, ration energy density, ration cost, and cost of other feedlot charges. By describing your cattle and previous management to a feedyard representative, he/she should be able to assist you in making a reasonable cost of gain projection. The most difficult items to estimate are rate of gain and feed conversion (feed to gain). Table 2 shows typical ranges in average daily gain and feed conversion for both steers and heifers over a range of initial weight upon arrival at the feedyard.

**Table 2. Typical weight gain and feed conversion (dry matter basis) based on sex and initial weight.**

Sex	Initial Weight	Average Daily Gain	Feed Conversion
Heifers	500 - 549	2.1 - 2.9	5.7 - 7.2
Heifers	550 - 599	2.2 - 3.0	5.7 - 7.3
Heifers	600 - 649	2.3 - 3.2	5.7 - 7.2
Heifers	650 - 699	2.5 - 3.3	5.6 - 7.3
Heifers	700 - 749	2.5 - 3.4	5.8 - 7.3
Heifers	750 - 799	2.6 - 3.5	5.8 - 7.7
Heifers	800 - 849	2.6 - 3.6	5.7 - 8.1
Steers	550 - 599	2.4 - 3.2	5.4 - 6.9
Steers	600 - 649	2.5 - 3.2	5.3 - 7.0
Steers	650 - 699	2.6 - 3.5	5.4 - 6.9
Steers	700 - 749	2.7 - 3.6	5.5 - 7.0
Steers	750 - 799	2.8 - 3.7	5.6 - 7.1
Steers	800 - 849	2.8 - 3.7	5.6 - 7.2
Steers	850 - 899	2.8 - 3.8	5.7 - 7.5

### Yardage and Other Costs

Some feedlots charge a yardage cost (usually five cents per head per day) in addition to the feed cost. Along with the yardage, a rancher should inquire about other fees such as processing, hay, insurance, taxes, and Check-off. Cattlemen who feed cattle in a number of custom lots report that the fees other than yardage are quite variable, ranging from none to over \$14.00 per head. The fee structure should be spelled out and included in the budget.

Once an estimate of feed conversion has been made, the feed cost of gain estimate can be calculated by multiplying the feed conversion estimate by expected ration cost. Some feedlot rations are priced on an “as is” basis. The ration cost should be adjusted to a dry matter basis or zero percent moisture basis. This is done by dividing the “as is” price by the percentage of dry matter in the ration. For example, in a ration with 28 percent moisture priced on an “as is” basis at \$5.40 per hundred, the ration dry matter cost is \$7.50 per hundred ( $\$5.40/.72$ ).

### Medical Costs

Most healthy pens of yearling cattle incur medical costs (including processing and implants) of about \$8.00 to \$12.00 per head during feeding. Sickly calves can at times incur costs in excess of \$25.00 per head. A rancher has no excuse for shipping high health risk cattle to the feedlot. All good feedlots can inform a rancher of what steps are necessary to reduce health costs to a minimum.

### Death Loss

It is normal to figure 0.5 to one percent death loss in yearling cattle in feedlots. Cattle placed on feed during late fall and

early winter are most susceptible to high losses. Death losses in calves are potentially high if management of the calves prior to and during shipment and receiving is lacking. Usual death losses are about three percent with a range of about one to ten percent. Most death losses in calves can be traced back to stale sale barn calves moved during adverse weather or to fresh weaned ranch calves shipped direct to a feedlot.

If a rancher intends to feed calves, it is wise to hold the cattle 20 to 45 days following weaning before shipping. Coordinate this pre-shipment program with the feedlot’s veterinarian.

Death losses occurring right after arrival at the feedlot are not as costly as losses that occur in the later phases of feeding. Poor gains and conversions seem to always accompany high death losses. A high death loss is of less significance with low priced cattle than with high priced cattle. Any rancher feeding his or her own cattle should include a provision in the budget for death losses. In feeding yearling cattle, experienced feeders whose average death loss is 0.5 percent will often feed five or six pens without a death and then lose three cattle out of a hundred on the next. Feedlots will notify the cattle owner of death losses and the cause of death.

### Pen Sizes and Risk Sharing

Feedlot cattle are usually fed in pens of 70 to 150 head. However, many feedlots have pens as small as 25 head to as large as several hundred. A number of ranchers each having 100 steers to feed may find it desirable to pool their cattle into many pens, often started on feed at different times. Each rancher can own portions of each of the pens. This technique often irons out peaks and valleys in both feeder and market cattle prices.

Cattle should be carefully sorted so that each pen is of about the same size and type of cattle. “Type” of cattle refers to the ultimate mature size and to carcass traits. Many feedlot managers prefer to feed Angus or Angus-cross steers because they are usually easy to sell at top market price when finished. Some exotic cross heifers make good feeders in High Plains feedlots because they finish at a more desirable weight for that market than do small type heifers.

As a rule, the more uniform that cattle are in background, type, and weight, the better job the feedlot can do in terms of minimizing costs and obtaining top price. Cattle that do not grade when finished sell for discounted prices.

### Fed Cattle Marketing

Feedlots make no charge for selling a customer’s cattle. They do provide him or her with market advice and will sell according to the instructions. Feedlot cattle are usually sold at the feedlot (FOB) on actual weights less a four percent pencil shrink. In this case, the buyer of the cattle is responsible for the freight and any possible condemnations (i.e. carcasses lost in the plant due to disease or injury). Sometimes it is to the cattlemen’s advantage to sell on a grade and yield basis, or “in the beef,” when feedlot management and the owner feel it will net the customer a higher return.

When cattle are sold in this manner, the cattle owner pays for the freight to the packing plant and also stands the risk of any condemnations. Very high quality grading cattle or those with a high dressing percent often bring more net money to the cattleman on a grade and yield basis.

With “in the beef” selling, the packer buyer takes the grading risk. Some feedlots and alliances use a pricing grid for selling cattle. These grids, worked out between the feeder and packer, may pay significant premiums for cattle with desirable carcasses. It is very important that you know the carcass traits of your cattle, as formula selling has the potential to bring you significantly more or less than the cash market.

## Interest and Financing

Methods of financing cattle feeding ventures are quite flexible. It is usually best to use your normal sources of financing when carrying your cattle through the feedlot. If the rancher has adequate financing to cover the cattle costs throughout the period required to finish the cattle, he or she can usually obtain additional local financing to cover feed bills.

Feedlots usually bill for feed and services twice monthly. These bills can be sent either to the owner or his financial agent for payment. Another option frequently available is to make arrangements to have the feedlot finance the feed bill. When this is done, feed bill and finance charges are deducted at the time the cattle are sold.

It is important that the rancher check the local interest rates against those of the feedlot's financing plan and select the least costly plan. Refinancing of cattle at the time they are placed on feed is frequently practiced. In this case, the cattle are appraised for value and the owner can receive cash for the difference between their appraised value and loan margin required by the lender. Margin amounts are dependent on an owner's financial statement and the possible risk that the lender sees in the loan. Current margins range from \$50.00 to as much as \$150.00 per head, depending on the risk to the lending agency.

## Interest Costs

Interest cost will be a significant item in the cost of feeding cattle. Total interest cost may be estimated as in the following example:

- A. Cattle cost at \$300.00 for 120 days at 10%  
$$\$300.00 \times \frac{0.10^a}{360^b} \times 120 = \$10.00$$
- B. Feed cost at \$1.50 per day for 150 days = \$180.00  
$$1/2^c \times 180^c \times \frac{0.10^a}{360^b} \times 120 = \$3.00$$
- Total interest costs per head = \$13.00

<sup>a</sup>Interest rate as a decimal.

<sup>b</sup>Bankers year.

<sup>c</sup>Estimated feed bill.

<sup>d</sup>Assuming that feed is charged as fed.

## Prepaid Feed

A rancher can be insured against unexpected rises in feed costs by purchasing sufficient quantities of grain through a feedlot, either before or at the time the cattle are placed on feed. The key point to keep in mind is that IRS regulations do not allow one to pay a true feed bill in advance, but the IRS does allow the purchase of commodities such as grain, silage, or hay for future use. These prepaid commodities can be used by a rancher using the cash basis of accounting to roll income into the next year, if he or she intends to feed cattle during the next year.

At times of uncertainty about feed supplies and feed prices, a pre-purchase of feed commodities should be thought of as a possible hedge rather than a tax shelter. When a feeder pre-purchases commodities, the cost of the prepaid feed commodities are deducted from the normal ration price at each billing period. If feeds are purchased early, interest costs on the feed bill may be much higher depending on the timing.

The formula for estimating feed interest was based on the assumption that feed does not have to be paid for until it is fed. Most feedlots can handle prepaid commodities through their billing system. The basic commodities which make up a feedlot diet (i.e.

corn and soybean meal) can be hedged if desired for additional protection.

## Managing Risk

It is beneficial at times to hedge cattle on feed. Simply put, this means entering into a contract to deliver cattle at some future date at a specified price. Normally, cattle are not delivered. A cattle contract is written on 40,000 pounds of live cattle, or usually 35 to 38 finished steers. The contract carries a commission of \$30.00 to \$70.00, which covers both buying and selling. A margin requirement of \$900.00 must be maintained against the closing price on the exchange at any day.

The contract works as follows. Suppose in August you sold a live cattle contract on cattle for December delivery for \$70.00. You would be required to put up \$900.00 in addition to the commission. Suppose that in one month the value of the contract rose to \$75.00 per cwt (up 500 points). To maintain the contract you must maintain a \$900.00 margin. The value of the contract has gone up (40,000 X \$0.05 per pound = \$2000.00).

To maintain your position, you would be required to put up an additional \$2000.00 margin. If the future prices had gone the other way and, for example, the contract closed at \$65.00 per cwt a month from now (down 500 points), you could contact your commodity broker and draw out \$2000.00 cash because you would have had a margin of \$2000.00 in excess of the \$900.00 requirement. If you did this and then the closing price rose again, you would have to put the margin back in to maintain your contract.

The key point is that, as a feeder, you must nearly always put up additional margin whenever the futures market closes on a higher price than your contract. This means that in making provisions for financing the cattle and feed, provisions must also be made for a line of credit to cover increased margin calls. Some lending agencies figure 500 points per contract (\$2000.00) and others as much as 1500 points (\$6000.00). Additional margin will be an additional interest expense, but should not scare people out of hedging cattle. As a feeder, you may or may not be called on for additional margin. If necessary to protect the contract, provisions should be made to have the money available. Additional information on hedging cattle can be found in OSU Extension Facts 433, 434, 436, and 444.

## Settlement of the Futures Contract

As the time draws near for the contract to be fulfilled, the normal procedure is to sell the cattle for cash and then buy back the contract at the same time. Suppose the contract called for \$70.00 and the closing contract on that day was \$65.00. Thus, you could buy a \$70.00 contract for \$65.00, making \$5.00 per cwt on the transaction. You made \$5.00 per cwt on paper, and when added to the \$65.00 you received for the cattle, you net \$70.00 per cwt as originally planned. If cattle went up to \$75.00 at the time your cattle were ready, you could sell your cattle for \$75.00. Thus, you would have a paper loss of \$5.00 per cwt.

Most of the time the cash market and the futures market do not come together until the last day of a futures contract. You will likely sell the cattle at another time. Historical basis tables have been developed for most of the major cattle feeding areas. These basis tables can aid you in predicting the difference in the actual cash market and the futures market.

Basis is very important and needs as much or more of your attention than does the actual futures price. A recent basis table prepared by the Texas Cattle Feeders Association shows a five year average basis for steers with a high of \$2.22 for the month of May and a minus \$1.30 for the month of September. The \$3.50 swing in basis should make you aware that basis is as important as the futures price.

Cattle are rarely delivered against the futures contract. However, when cattle are considered for delivery, the key point is that the cattle must be deliverable, which means that they must meet the specifications in the futures market contract. Severe discounts will occur on cattle that do not meet the delivery criteria. Most feedlots have the knowledge and experience to aid a feeder in executing a sound hedge. It would be foolish for a rancher without experience in this area to hedge his cattle without the feedlot's advice.

Hedging a profit on cattle will greatly reduce the amount of margin required by a loaning agency. When a hedge can be made which will project a reasonable profit, it is wise to do so. Options are sometimes more desirable to many cattlemen. In the case of an option, the cattleman purchases the right, but not the obligation, to sell cattle at a predetermined price. Remember that basis is important. As discussed previously, the futures and cash prices are not the same and the cash market will likely pay you more or less than the futures price at the time you sell your cattle.

Many of the experienced cattlemen who use options attempt to reduce the cost of options by selling calls on the same cattle, which gives someone else the rights to profits above a defined futures price. You may find at times that the feedlot manager, in an attempt to maximize return on cattle, will make selling decisions as much on basis relationships as on the cash price.

### Steps Required to Feed Cattle

There is little justification for putting cattle on feed except to make a profit. Step one in deciding whether or not to feed cattle is to calculate either the necessary selling price to break even, or to figure potential profit. Step two pertains to arranging the financing for the cattle, feed bills, and contract margins, and to develop a reasonable cash flow so that money is available when needed. The budget shown in Table 3 can be useful in making the decision of whether or not custom feeding is a profitable alternative. Oklahoma State University has software available to aid a rancher in the discussion making processes. These are found at [www.ansi.okstate.edu/software/](http://www.ansi.okstate.edu/software/)

**Table 3. Feedlot Budget**

600# Steers at \$71.00 Delivered to Feedlot

		Example Prices	Your Prices
1. Layed in cattle price at 71.00 <sup>a</sup>	= \$426.00	_____	_____
2. Feedlot sale weight	= 1050 lbs.	_____	_____
3. Estimated days to market	= 150 days	_____	_____
4. Interest on cattle @ 10% for 150 days 426 X $\frac{0.10}{360}$	X 150  = \$17.75	_____	_____
5. Death loss at 1% (426 X .01)	= \$4.26	_____	_____
6. Veterinary and processing costs	= \$10.00	_____	_____
7. Estimated feed cost — 150 days-feed 450 lbs. of gain — 6.00# feed/lb. gain 2700 lbs. 0% moisture feed @ 7.50/cwt	= \$202.50	_____	_____
8. Cost of futures contract at \$70.00 per contract 70 divided 35 = 2.00 (commission)	= \$2.00	_____	_____
9. Estimated interest on 500 points Margin call plus normal margin for 60 days \$76.32 at 10% for 60 days 82.86 X $\frac{0.10}{360}$	X 150  = \$1.38 = \$7.50	_____	_____
10. Yardage cost 150 x 0.05 = \$7.50	= \$7.50	_____	_____
11. Interest on Operating Capital (\$202.50 + \$10.00 + \$2.00 + 7.50) X .10 X $\frac{10}{360}$ X 150	= \$4.63	_____	_____
Total cost per 1050-lb. steer	= \$676.02	_____	_____
Break even cost $\frac{\$676.02}{1050}$ - \$64.38	=	_____	_____
Profit per head if sold at \$70.00	= \$58.98 per/head	_____	_____

<sup>a</sup>Pounds of cattle at the feedlot divided into cattle plus freight costs.

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