

## **EVALUATING STOCKER AND CATTLE FEEDING RETAINED OWNERSHIP**

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One of the appeals of cow-calf operations is constancy. Calves are born, bulls are put out, feed is purchased, and calves are weaned and sold at the same time each year. Unfortunately, economics have made the sell-at-weaning program difficult to sustain. If calf prices at weaning become untenable, ranchers must decide if they can or want to take the risks of further ownership. While computer technology cannot guarantee a profit, it can make management of the numbers necessary to evaluate retained ownership a little easier. This paper describes some of the considerations needed to evaluate retained ownership through stocker and feedlot phases. Computer software available from OSU that can greatly simplify the evaluation of stocker and feedlot options is described.

### **STOCKER OPERATIONS**

A major consideration when evaluating retained ownership through a stocker phase is whether the calves will be retained on the ranch and will impact the number of cows that can be maintained. Dr. Derrell Peel has written an excellent paper entitled "Retained ownership opportunities for Oklahoma Cattle Producers (Oklahoma Current Farm Economics. Vol. 67, no. 3). Producers considering long-term changes in the makeup of their operation should read this paper carefully. A weaned calf can eat up to half as much as a cow and the impact of several hundred calves on a ranch must be considered.

If sufficient grass is available on the ranch to consider retaining calves for some period after weaning or if summer grass, winter wheat, or similar forage is to be rented off the ranch, then the calculations involved are very similar to the feedlot calculations. The OSU STOCKER PLANNER is a spreadsheet that permits easy evaluation of stocker programs.

This stocker planner is intended to evaluate the purchase of stocker cattle for summer pasture or wheat farming programs. Because of the interest in custom grazing, this option permits pricing pasture two ways: cost per pound of gain, and cost per head per month. For this program to be useful, the user needs to be able to supply or estimate a number of costs with good accuracy.

Stocker cattle are often an enterprise within a ranching or wheat farming operation. While stocker cattle are a separable enterprise within many Oklahoma farms and ranches, knowledgeable planning of each cattle purchase is essential because semi-trailer loads of cattle can cost in excess of \$45,000.

Analyses have consistently shown that buying and selling prices are often the major factor determining whether stocker cattle will be profitable. Because the various types of cattle bought for "stocker" operations can range from cull cows to baby calves, the task of deciding which are potentially good deals can be daunting. However, the computer makes it possible to look at many factors at once and determine the best combinations of types and sexes of cattle to buy on a given day.

Rate of gain during ownership is another critical element in stocker ventures. Practices, such as supplemental feeding, feed additives and implants that can alter rates of gain must be evaluated carefully. Simple prediction equations are built into the program and the effects of management practices like supplemental feeding, ionophores, and implanting can be predicted and evaluated.

One of the biggest pitfalls in stocker cattle management is the failure to evaluate a cattle program in terms of length of ownership. There will be times when sudden market swings cause cattle to appreciate in value over a short period of time. In these cases, cattle may be more profitable if sold ahead of the scheduled sale date. If the profit potential left in these cattle will probably only deteriorate over a longer period, the cattle may be best sold early even if all forage was not utilized. Thus, the most profitable option is usually to sell these cattle and find another class of cattle for replacement. Remember the goal is to make the most money, not to graze up all the forage.

### **HANDLING THE ARITHMETIC**

A computer program titled OSU STOCKER PLANNER can take most of the headache out of the numerous calculations needed to evaluate a stocker cattle venture. This program and the feedlot program described later in this paper can be obtained from any OSU county extension office. The programs have been written to operate on virtually any IBM-compatible computer. They do not require a spreadsheet program to run.

A printout of the program is shown in Table I. The numerical inputs that can be changed by the user are marked by an asterisk (\*) in the example. In the actual program, these cells are unprotected and will appear as a different color or intensity

on the screen. The other cells are locked.

The important inputs will be discussed below one line at a time. The numbers of these items correspond with those on the left-hand side of the example output.

1. Date on which the cattle are purchased. To change date press <ALT> and D keys at the same time, then enter date in the following format, MM/DD/YY.
2. CATTLE COST \$/CWT and PASTURE PRICING OPTIONS. This is the actual or expected cost of the cattle in dollars per 100 pounds with all freight and commissions included in the cost. The pasture pricing option is a 0 or a 1. If you want to price pasture on cents per pound of gain use 0, or for pricing in terms of dollars per cwt per month, use 1.
3. PURCHASE WEIGHT LBS. The average purchase weight of the cattle in pounds (same basis as #1 above).
4. CATTLE COST \$/HEAD. This is a computed item, which the program calculates from items 1 and 2.
5. DAYS PASTURED. Input the expected number of days the cattle are to be grazed (this will also be the total period of ownership).
6. EQUITY IN \$/HEAD. This is the dollars of financing (per head) which will not be charged interest in the budgets below. A large amount will reduce your interest cost.
7. CATTLE INTEREST RATE, %. The interest rate in percent on the cattle purchase. This interest rate will be charged for the total days pastured. Also note item 18 which is interest on operating capital and assumes usage for only half of the ownership period, the same as for feedlot operating interest. To the right of the inputs, the program will compute the total interest cost and the cost per day for this item.
8. PASTURE COST OPTION. (S/POUND OF GAIN [0] or \$/CWT PER MONTH [1]): (0) Pasture cost in \$ per pound of gain. (1) Pasture cost in \$ per hundred pounds of liveweight per month. These input values must be coordinated with the pricing option. Regardless of which way pasture costs are inputted, this input is one of the most critical and, for many, one of the most difficult to determine. In wheat grazing operations where a number of costs are hard to apportion to grain or to cattle, it is suggested that the portion of the costs which can be attributed to cattle based on history or experience, be divided by expected pounds of gain to determine this figure. This technique will allow the user to use this program to determine which sex, weight class, or type of cattle might have the greatest profit potential. Always note the total pasture cost and the cost per day which are being generated to the right of your input value. The computer can be used to estimate pasture cost per pound of gain, for example, if you have a good idea of what the total cost figure should be.
9. MEDICAL COST/HEAD (\$). Input the total cost in dollars per head for medications, wormers, implants, and the costs of treatment of sick cattle. This input item is highly dependent on the class and origin of the cattle plus the time of the year and the skill of the cattleman.
10. DEATH LOSS (%). Expected death loss assumes that the cattle die on the day of purchase after the medical costs have been added to the cattle cost. A death loss figure at least as high as expected should be used. If the cattle are grazed for extended periods of time it may be wise to increase the figure to account for feed expenses which occur on cattle dying late in the ownership period.
11. PICKUP & EQUIPMENT/HEAD (\$). Cost on a dollar per head basis.
12. MANAGEMENT FEE (\$/HEAD). Management fee on a per head basis. This fee should be scaled for length of ownership and other factors.
13. LABOR COST (\$/HEAD/DAY). Labor cost per head per day.
14. BEEF CHECK OFF (\$) The beef check off fee (\$1 per head).
15. OPTIONS/HEDGE COST (S/HEAD). A dollar amount per head for hedging or options cost. If the cattle are contracted and the cattleman is paid a deposit, this amount may be added as a negative number (i.e. -25). This amount would then decrease operating interest cost. The sale price should be reduced to reflect the deposit received.
16. MARKETING COST (\$/HEAD). \* Commissions or fees paid to market the cattle. This wording may be changed to state any other cost which is entered on a per head basis.
17. FREIGHT (\$/HEAD). \* A dollar amount per head. This wording, like the previous one, is not locked and may also be changed.
18. FEED COST (\$/HEAD). The total non-pasture feed cost for the animal on a dollar amount per head. This could include receiving feed, for example.
19. OPERATING CAPITAL INTEREST. Interest on all items except the purchase cost of the cattle, is calculated on one half the total costs for the total period of ownership. In most cases this method will give a good estimate of operating capital interest. This formula will underestimate interest if the costs were prepaid at the start of the ownership period.

20. **PERFORMANCE OPTIONS.** The spread sheet allows the user to set an expected daily gain for entire grazing period. It is then possible to study the effect of an option such as feeding, or implants on the rate of gain, and economic performance. For example, if an implant is present, gain (shown in the option column) will increase by 12 percent over the expected. Evaluation of supplemental feeding on summer pastures requires four inputs: First, the number of days cattle are given the supplement (DAYS FED); second, the amount of feed (POUNDS/DAY); third, whether the feed is a high-protein supplement or low-protein energy supplement (PROTEIN SUPL.); and fourth, whether the supplement contains the proper dose of an ionophore (IONOPHORE). In the case of the last two items, a zero (0) is entered for no and a one (1) for yes. The following prediction equations are used in this program.

- A. Response to energy feed = 0.09 lb. gain/lb. supplement.
- B. One time response to high protein feed = 0.32 pound gain per day in addition to the .09 lb. response to energy for a total of .41 lb. gain per pound of protein supplement.
- C. Response to ionophore at the proper level = 0.20 pounds per day.
- D. Response to implants = 12%.

Example 1: Summer grass only. Feed 1 pound of high protein cube with ionophore. (0.32 one time protein response + 0.09 energy response + 0.20 ionophore response = 0.61 pounds per day).

Example 2: Summer grass only. Feed 2 pounds per day of high protein cube with an iono-phore. (0.32 one time protein response + (2 X .09) 0.18 feed response + 0.20 ionophore response = 0.70 pounds per day).

Example 3: Feed 4 pounds of energy supplement (less than 20% protein) per day without an ionophore. (4 X 0.09 energy feed response = 0.36 pounds per day).

- 21. **PROJECTED DAILY GAIN.** The profit projections are made on an expected gain that the user must supply. Gain should be stated on a pay-to-pay basis. The **OPTIONAL GAIN** is the projected gain plus added gain from supplement feed, feed additives, and implants. If the projected gain, usually based on experience, in a given operation already included supplements, additives and implants, the **OPTIONAL GAIN** would equal the **PROJECTED GAIN**.
- 22. **TOTAL GAIN (POUNDS).** The calculated pounds of gain based on rate of gain and days owned.
- 23. **SELLING WEIGHT.** The calculated selling weight on a pay basis.
- 24. **SELLING PRICE (\$/CWT).** Selling price is calculated by the program from the weight and price table in the lower left corner of the illustration. Items 28 and 30 are critical for this table to be correct.
- 25. **COST OF GAIN (\$/CWT).** These calculated values include all entered cost items and will represent a true pay-to-pay cost of gain.
- 26. **FEED ONLY COST OF GAIN.** The calculated feed only cost of gain includes only the cost of pasture (line 7) and feed (line 17). This cost does not include a number of very important other costs.
- 27. **BREAK-EVEN SELLING PRICE.** This calculation represents the price, which must be received to recover all of the input cost items. Cattle selling for less will lose money.
- 28. **PROFIT/HEAD.** The calculated returns per head.
- 29. **TOTAL PROFIT.** The result of multiplying the profit per head by (the number of cattle owned).
- 30. **EXPECTED VALUE OF GAIN.** \$50.00\* TOTAL COST FOR-->> 110\* HEAD Two important inputs are on this line. The second one (the number of cattle) is easy. However, the first one "EXPECTED VALUE OF GAIN" is more complex. This number represents the price in dollars per hundred pounds that the expected cattle market will be paying for added weight gain. If, for purposes of illustration, a given class of cattle weighing 500 pounds were selling for \$70 per cwt or \$350 per head, and the same class of cattle weighing 600 pounds was selling for \$66 per cwt or \$396 a head, then it would appear that 100 pounds of added gain was worth \$396 - \$350 or \$46 per cwt. After careful evaluations of the price differences of different weights of the same class of cattle the user should be able to estimate the value of gain. This figure is always changing. Feed costs and optimism or pessimism about the market are powerful influences on the value of gain. Item number 31, **EXPECTED SELLING PRICE** for the 700 pound animal, is related to this value.
- 31. **EXPECTED SELLING PRICE FOR THE 750 POUND ANIMAL.** Expected selling price for a 750 pound animal. The weight and price chart is calculated by adding or subtracting the value of gain (28) to the value placed on the 700 pound animal. This is done because a 750 pound steer represents the average value of the feeder cattle futures contract. A realistic basis that will represent the likely selling value of the cattle at your projected selling time should be used to arrive at this price.
- 32. **TOTAL MONEY NEEDED.** The "select" switch should be set to zero (0) for the expected and one (1) for the optional gain. At the lower right is a summary of the total cash needed based on the number of cattle purchased and the option selected.

**Table I. Oklahoma State University Stocker Planner  
(Pasture Cost of Gain or Cattle Weight Basis)**

1.	***PRESS ALT D TO ENTER DATE***		STARTING DATE 11/01/95*
2.	CATTLE COST (\$/CWT)	\$100.00	PASTURE PRICING OPTIONS: 0*
3.	PURCHASE WEIGHT	450*	COST/POUND OF GAIN=0
4.	CATTLE COST (\$/HEAD)	\$450.00	COST,\$/CWT PER MONTH=1
5.	DAYS PASTURED	130*	COSTS, TOTAL OR DAILY BASIS
		*****	
			TOTAL DAILY
6.	EQUITY (\$/HEAD)	\$ 0.00*	
7.	CATTLE INTEREST RATE %	13.00*	\$ 21.13 \$ 0.16
8.	PASTURE COST OPTION:	\$ 0.30*	\$ 58.50 \$ 0.45
9.	MEDICAL COST (\$/HEAD)	\$ 8.00*	\$ 8.00 \$ 0.06
10.	DEATH LOSS (%)	2.50*	\$ 11.52 \$ 0.09
11.	PICKUP & EQUIPMENT/HEAD (\$)	\$ 1.50*	\$ 1.50 \$ 0.01
12.	MANAGEMENT FEE (\$/HEAD)	\$ 0.00*	\$ 0.00 \$ 0.00
13.	LABOR COST (\$/HEAD/DAY)	\$ 0.05*	\$ 6.50 \$ 0.05
14.	BEEF CHECK OFF (\$)	\$ 1.00*	\$ 1.00 \$ 0.01
15.	OPTIONS/HEDGE COST (\$/HEAD)	\$ 0.00*	\$ 0.00 \$ 0.00
16.	MARKETING COST (\$/HEAD)	\$ 7.00*	\$ 7.00 \$ 0.05
17.	FREIGHT (\$/HEAD)	\$ 2.65*	\$ 2.65 \$ 0.02
18.	FEED COST (\$/HEAD)	\$ 8.00*	\$ 8.00 \$ 0.06
19.	OPERATING CAPITAL INTEREST	13.00*	\$ 2.46 \$ 0.02
	SPER HEAD AT END	\$578.25	TOTAL: \$128.25 \$ 0.99
20.	PERFORMANCE OPTIONS		
		SELLING DATE	03/11/00 EXPECTED OPTION
21.	FOR ITEMS WITH**PROJECTED DAILY GAIN		1.50* 1.50
22.	0=NO; 1=YES; 0*	TOTAL GAIN POUNDS	195 195
23.	IMPLANT COST \$ 0.00*	SELLING WEIGHT	645 645
24.	IMPLANT PRESENT** 0*	SELLING PRICE (\$/CWT)	88.28 88.28
25.	DAYS FED 0*	COST OF GAIN (\$/CWT)	65.77 65.77
26.	POUNDS/DAY 0.00*	FEED ONLY COST OF GAIN	34.10 34.10
27.	FEED COST/CWT \$ 0.00*	BREAK-EVEN SELLING PRICE	89.65 89.65
28.	PROTEIN SUPL.** 0*	PROFIT PER HEAD	-8.83 -8.83
29.	IONOPHORE** 0*	TOTAL PROFIT-971.73	-971.73
30.	EXPECTED VALUE OF GAIN \$ 50.00	TOTAL COST FOR 110* HEAD	
	PRICE STRUCTURE AT SALE WTS		
	WEIGHT \$ PER CWT CASH NEEDED	TOTAL CATTLE COST	49500.00
	350 \$ 120.00	TOTAL CATTLE INTEREST	2323.75
	400 \$ 111.25	GAIN COST (PASTURE ONLY)	6435.00
	450 \$ 104.44	MEDICAL COST	880.00
	500 \$ 99.00	DEATH LOSS COST	1266.79
	550 \$ 94.55	PICKUP & EQUIPMENT	165.00
	600 \$ 90.83	LABOR COST	715.00
	650 \$ 87.69	MANAGEMENT FEE	0.00
	700 \$ 85.00	BEEF CHECK OFF	110.00
	750 \$ 82.67* <-EXPT OR FUTURES	OPTIONS/HEDGE COST	0.00
31.	800 \$ 80.63 PLUS OR MINUS	MARKETING COST	770.00
	850 \$ 78.82 BASIS	FREIGHT	291.50
	900 \$ 77.22	FEED & MINERAL& IMPLANTS	880.00
32.		OPERATING CAPITAL INTEREST	270.24
		TOTAL MONEY NEEDED	63607.27

## CATTLE FEEDING

Custom cattle feeding refers to sending cattle to a commercial feedyard that specializes in feeding and managing cattle until they are ready for slaughter. While the thought of owning cattle in a feedlot scares many ranchers, it is a practice that can greatly increase returns in some cases. There are three circumstances in particular in which retaining ownership through the feedlot phase can increase net returns cow-calf operations:

- Weaned calves are sold off the ranch at times of the year that historically provide poor markets (i.e. mid-summer for fall-born calves and early fall for spring-born calves). The rancher desires to move market timing to a more desirable month.
- The calves have excellent feedlot performance and carcass value and are undervalued by stocker and feeder markets.
- Calves will sell at very poor prices because of a temporary downturn in the market and the rancher needs to buy time.

The most essential piece of information needed before deciding if retained ownership through the feedlot is warranted is determining the real value of the calves as feeders. Real value may well be different from the price the market is offering. Progressive ranchers may feed some of their calves each year regardless of profit potential just to determine the feeding and carcass performance of their calves. This is becoming more important as the industry moves closer to value-based marketing. Cattlemen who would like to try cattle feeding, but are uneasy about sending a pen of 100-150 head to a feedlot for the first time may want to look at a program like the OK Steer Feedout, run by OSU Extension. Participating ranchers can send groups of 5 steers per ranch to a central Oklahoma feedlot. The steers are fed together with steers from other ranches and all performance and carcass data are collected and analyzed by OSU personnel. Contact your county extension office or area livestock specialist for information.

### Selection of Cattle For Feeding

Uniformity is essential. The calves 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. When this careful control is started on the producing ranch, the uniformity of the cattle can almost always be expected to achieve a 5 to 10 percent advantage in efficiency over "put together" cattle.

Rarely can an entire calf crop be fed together. Age and size differences within a calf crop will likely require sorting into at least three groups: heavier (older) calves, lighter (younger) calves, and culls. There is usually a 5 or 10% end of calves that may be best taken to an auction. Both steers or heifers can be fed, but usually not in the same pen. In recent years the value of finished heifers has improved relative to steers with both selling for close to the same price. Compared to steers, heifers will gain about 0.2 lb./day slower and require about 0.5 lb. additional feed dry matter per pound of gain.

### HOW TO EVALUATE A CUSTOM FEEDING OPPORTUNITY

Put a realistic value on your cattle and calves at home. This is usually either the local auction price less freight and commission 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. Typical shrinkage from ranch weights to custom feedlots range from 3-8% depending on the length of haul. Please refer to Table II to estimate cattle shrinkage:

**Table II. 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/CWT for your steers with a 3% pencil shrink. In reality, he offered you 97% 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% (from Table II) from ranch weight during the haul. Thus your cattle would have to cost \$69.80 {65.96 x (100/94.5)}

= 69.80} laid into 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 semi-trailer equipped to handle cattle is the most economical way to move cattle. These trucks will haul from 48,000 to 52,000 pounds of cattle. Hauling rates range from \$1.75 to \$2.00 per mile. Usual current rates 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 could get \$68 less 3% shrink at home, you could figure that you could lay your cattle into a feedlot 300 miles away for \$69.80 plus \$1.20 freight for a total of \$71.00.

### Feedlot Costs

Custom cattle feeders provide feed and services for a price. Good feedlot managers can estimate how much it will cost to feed your cattle from feedlot "In Weight" to final "Pay Weight" Estimates of lot costs excluding yardage can be made by multiplying feed conversion ratios (given in Table III) times the cost of feed on a 100% dry matter basis. Remember, these are "industry averages" and pens of uniform, high-performance ranch calves may do much better. They may also perform worse and that is why it is so important to know the performance potential of one's own cattle.

**Table III. Dry matter feed conversions on average cattle types from pay weight to pay weight, assuming high concentrate rations.**

Cattle	In Weight	Market Weight	Conversion Ratio
Steers	500	1000	6.0
	500	1050	6.3
	600	1050	6.0
	600	1100	6.3
	700	1050	6.0
	700	1100	6.3
	700	1150	6.8
	800	1150	7.1
	800	1200	7.3
	800	1250	7.5
	900	1250	7.7
	900	1300	8.0
	Heifers	500	1000
600		1025	6.9
700		1050	7.3
800		1100	8.0

### Yardage and Other Costs

Some, but not all, feedlots charge a yardage cost (usually 5 cents per head per day) in addition to the feed cost. In addition to 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 per head. The fee structure should be spelled out and included in the budget.

Some feedlot rations are priced on an "as is" basis. They may be adjusted to a 0% moisture basis (or 100% dry matter) by dividing the as is price by the dry matter content of the ration (expressed as a decimal, i.e. .72). If, for example, a feedlot ration containing 28% moisture costs \$5.40 per hundred, its 0% moisture (dry matter) cost will be  $\$5.40 / .72 = \$7.50$ .

### Medical Costs

Most healthy yearling cattle incur medical costs (including processing and implants) of about \$8.00-\$12.00 per head during feeding. Sickly pens of calves can at times incur costs up to as much as \$25 per head. On an individual basis, a chronically sick calf can run up medical costs of up to \$150. A rancher has no excuse for shipping high health risk cattle to the feedlot. All good feedlots can inform a rancher of what is necessary to reduce health costs to a bare minimum. The 45-day "preconditioning" programs described in this publication are important for properly setting up calves to enter the feedlot environment.

### Death Loss

It is normal to figure 0.5 to 1% 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 quite high if management of the calves

prior to and during shipment and receiving is lacking. Calf death losses average about 3% with a range of about 1 to 10%. Most death losses in calves can be traced back to stale sale barn calves moved during adverse weather or to fresh ranch calves shipped directly to a feedlot.

Death losses which are incurred right after arrival at the feedlot are not as costly as losses which 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 own cattle should include a provision in his budget for death losses. In feeding yearling cattle, experienced feeders whose average death loss is 0.5% will often feed 5 or 6 pens without a death and then lose 3 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 100 to 140 head. However, many feedlots have pens as small as 25 head to as large as several hundred. It is possible for a number of small ranchers to pool their cattle into many pens, often started on feed at different times. Each rancher could 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. A good understanding or contract among the ranchers will be essential to avoid arguments about sorting feed bills, sales receipts, and deciding who to charge for death losses.

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 which do not grade when finished are usually destined to be over-fed and to sell for discount prices.

### **Fed Cattle Marketing**

Feedlots make no charge for selling a customer's cattle. They do provide him with market advice and will sell according to the owner's instructions. The most common method of selling feedlot cattle has been to price the cattle live in the feedlot (FOB) on actual weights less a 4 percent pencil shrink. In this case, the buyer of the cattle is responsible for the freight to the packing plant 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. Cattle with high quality grades and dressing percents often bring more net money to the cattleman when sold on a grade and yield basis. Ranchers selling on a grade and yield basis usually know the carcass traits of their calves and are willing to accept the grading risk. Ranchers who do not know their cattle may be advised to take the live bid which is based on "average" performing cattle. OSU Extension Fact Sheet 459 discusses how packers arrive at bid prices for fed cattle.

### **Interest and Financing**

Financing has become a standard service for most commercial feedyards. This minimizes dependence on small, local banks that may not understand cattle feeding. Methods of financing cattle feeding ventures are quite flexible. Historically, feedyards have offered financing of feed bills at rates typically 1 or 2% over prime. When this is done, the feed bill and finance charges are deducted at the time the cattle are sold. Feedlots usually bill for feed and services twice monthly. If the feedlot is not carrying feed charges, bills can be sent either to the owner or his financial agent for payment. Recently, competition for high-quality calves has led to more extensive banking services provided by feedyards, if a rancher chooses to feed his calves, a feedyard may appraise the calves on arrival and advance part of the equity in the calves to the rancher's bank so the ranch note can be reduced. The feedlot, and its bank, are now the rancher's bank for the feeding phase. A portion of the equity (typically \$50 to \$150) in the calves is withheld as insurance against the feeding venture. Many feedyards will "partner" with ranchers. This reduces the rancher's exposure and many times increases trust between the rancher and the feedyard.

### **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 for 120 days at 10%

$$\frac{\$300 \times 120}{360} \times 10^a = \$10$$

B. Feed cost at \$1.50 per day for 150 days = \$180

$$\frac{1/2^d \times 180^c \times 120}{360} \times 10^a = \$3.00$$

Total interest costs per head = \$13.00

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

<sup>b</sup>Banker's year.

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

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

### Prepaid Feed

A rancher can ensure himself against unexpected rises in feed costs at times 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 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, but not all, 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 also be hedged using the futures markets for additional protection.

### Managing Risk

It may at times be desirable to hedge cattle on feed.

### Doing the Arithmetic

In the past, trying to keep up with changing cattle prices, feed costs, interest rates, and the other costs of feeding cattle overwhelmed many potential cattle feeders. However, the widespread application of computer spreadsheet software has made the arithmetic relatively simple.

Two spreadsheet programs for evaluating cattle feeding ventures are available from OSU. The Feedlot Calculator (FLCALC) may be best used by people thinking about buying feeder cattle. The Breakeven Feedlot Calculator (BEFLCALC) can be very useful to the rancher or stocker operator who is trying to decide if he should retain ownership or sell his calves. If the price of corn and other feedlot costs are known, along with an estimated sale price of the finished cattle, this program will calculate the estimated value of the calves as feeders. This is a critical number that can be compared with the price the rancher or stocker operator can get for the calves at auctions or from cattle feeders.