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Economics Commentator

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11-21-1994

## Feeding Versus Selling Cull Cows; Marketing Plan Execution


Dillion M. Feuz

*South Dakota State University*

Richard Shane

*South Dakota State University*, [richard.shane@sdstate.edu](mailto:richard.shane@sdstate.edu)

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### Recommended Citation

Feuz, Dillion M. and Shane, Richard, "Feeding Versus Selling Cull Cows; Marketing Plan Execution" (1994). *Economics Commentator*. Paper 311.

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## FEEDING VERSUS SELLING CULL COWS

by  
**Dillon M. Feuz**  
*Assistant Professor  
Economics Department*

Cull cow receipts account for approximately 20-30% of income from most cow-calf enterprises. However, some producers give little attention to this source of income and ways of enhancing it. For many producers, cull cows are sold at the time culling takes place, and much of this culling is done in the late fall soon after calves are weaned. Is it most profitable to sell cows when they are culled, or should they be fed for a period of time? Several factors need to be considered to properly answer that question. The purpose of this newsletter is to indicate what those factors are and how to take them into account.

Cows are culled from a herd for a number of reasons. The reason for culling will most likely affect the time culling takes place and could alter the most profitable marketing strategy. Reproductive failure, problems resulting from old age, and unsatisfactory performance are the most common reasons for culling an animal. While reproductive failure is generally diagnosed in the fall of the year, culling for other reasons could take place at other times.

Three factors impacting the decision to sell cows when culled versus feeding them and selling at a latter time are: (1) the seasonality of cull cow prices, (2) the price difference between grades of cull cows, and (3) the cost of feeding the cull cow. Each of these factors will be discussed in some detail.

### Seasonality

Cull cow prices generally follow a consistent seasonal pattern. Prices are normally the lowest in November, December and January and are at their highest level in March April and May. Prices during the summer months are typically near the average for  
(Continued on page 2)



## MARKETING PLAN EXECUTION

by  
**Richard Shane**  
*Grain Marketing Specialist  
Cooperative Extension Service*

Farmers are constantly encouraged to develop a marketing plan. Next, they are told the plan must be in writing. Even this isn't enough, if the plan isn't executed.

Many farmers have recently shared how they didn't execute their marketing plan for 1994 corn and soybeans. A few have reported success stories.

First, a success story -- an eastern SD farmer evaluated corn and soybean new crop put options on June 1st. December at-the-money corn puts of \$2.60 commanded a 15¢ premium and Sept \$6.75 soybeans put premiums were 30¢/bu. He bought two corn and two soybean put contracts because he could lock in a minimum price greater than the expected cost of production. In early August, the December corn futures price had declined to \$2.17 and November soybeans had declined to around \$5.50. Rather than hold until harvest, he decided to sell or offset his put contracts and take his profit. The corn put premium was 40¢/bu. and the soybean put premium was \$1.05/bu. The net on the corn put was 25¢ and on the soybean put was 66¢/bu. These amounts can be added to the harvest time price to determine final price for the commodities. With \$1.75 corn and \$4.90 soybeans, this farmer priced corn at \$2.00 and soybeans at \$6.15/bu. with no storage required. These prices should be reduced 1¢/bu. for brokerage commissions.

Second, a good plan but -- the second producer wrote a good plan to sell corn if his futures hit \$2.65 and soybeans if Nov futures hit \$6.75. With basis of -35¢ for corn and -40¢ for soybeans, expected price would be \$2.30 for corn and \$6.35 for soybeans, if the trigger price was hit. In early June, the weather in  
(Continued on page 4)

the year. Figure 1 contains a graph of the prices at Sioux Falls, South Dakota for 1984-1993 for utility grade cows. Prices are typically lowest in November when they are 6% below the annual average. In March the price is typically 4.5% above the annual average. Prices at many other locations, such as Billings, Montana and Omaha, Nebraska, have a similar seasonal pattern.

By simply considering this seasonal pattern, it may be profitable to feed cows that are culled in the late fall or early winter into the spring months to take advantage of the seasonal prices. On the other hand, cows that are culled during calving season or early summer may be most profitable if sold at the time of culling. However, the other two factors (cull grades and feed costs) still need to be considered.

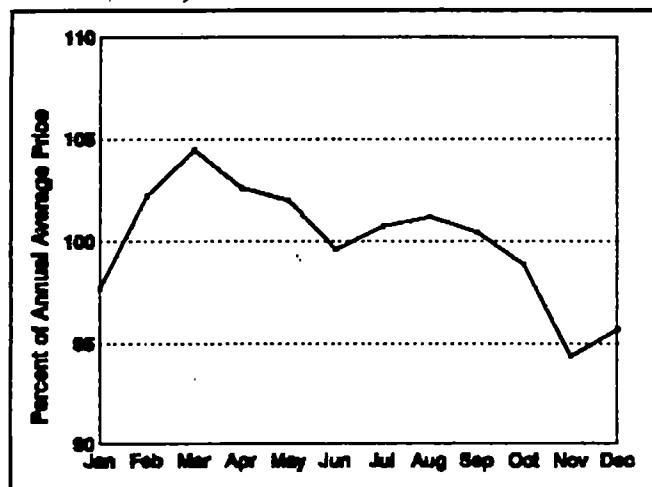


Figure 1. Seasonal Cull Cow Prices at Sioux Falls, South Dakota.

### Cow Grades

The price of cull cows is based on their carcass grade or their expected carcass grade. The most common grades, in order of least desirable to most desirable, are: Canner, Cutter, Utility, and Commercial. Younger aged cows may also reach the Standard, Select or Choice grade. Price differences between these grades at Sioux Falls are displayed in Table 1. These differences also are consistent with those at the Billings and Omaha markets.

Table 1. Percentage Price Increases Between Cull Cow Grades.

	Cutter	Utility	Commercial
Canner	9%	14%	15%
Cutter	-	5%	6%
Utility	-	-	1%

In a recent study at SDSU conducted by R.H. Pritchard, cull cows were purchased in November and December from area sale barns. The cows were sent to slaughter after 0, 50, 77, and 105 days on feed. The cows were fed a corn grain and corn silage balanced ration and gained 2.8, 3.0, and 3.1 pounds per day for each of the respective feeding periods. Table 2 contains the percentage of cull cows that were in each grade at slaughter.

Table 2. Percentage of Cows in Each Grade Following a Feeding Program of Shelled Corn and Corn Silage.

Days Fed	Grades			
	Can	Cut	Utl	Com +
0	64%	28%	8%	-
50	18%	57%	24%	1%
77	8%	21%	65%	6%
105	-	19%	74%	7%

Can = Canner, Cut = Cutter, Utl = Utility, and Com + = Commercial or higher.

In the trial at SDSU, initial condition of the cows did not affect the rate of gain, but it did have an effect on the size of the rib eye and the degree of marbling. From this trial, it would appear that most cull cows could be expected to improve one grade following a feeding period and that many could improve two grades. Therefore, depending upon costs, it may not only be profitable to feed fall and winter culls, but also profitable to feed other culls if they would be in the canner grade at the time of culling.

### Cost of Feeding

Revenue can often be increased by feeding cull cows due to seasonal prices, weight gains, and grade changes. However, that doesn't automatically imply a profit from feeding. We need to consider the cost of feeding. The primary cost in feeding is the feed cost. A charge for labor and facilities (yardage), interest on the cull cow, and death loss should also be considered.

Feed costs will vary depending upon the price of feed and the feedstuffs used in the ration. Proper ration balancing procedures should be used to balance a ration for the cows and determine a cost for the feed. A cost of around \$0.20 per day is often used to cover the yardage charge. Interest on the value of the cull cow at the time she is placed on feed should be charged until she is sold. For example, if you could sell the cull cow for \$450 and if you are paying 10% interest on an operating note and you plan on feeding the cow for 90 days, the interest charge would be:

$$\$450 \times .10 \times (90/365) = \$11.96.$$

Death loss would be the percent of death loss times the expected sale value. For example,

$$\$600 \times .01 = \$6.00.$$

### Partial Budget Analysis

The proper manner to consider all of these factors is to construct a partial budget and evaluate if it would be profitable to feed the cull cow rather than to sell her when the decision is made to cull her. The partial budget will have three main sections: (1) the expected revenue at the end of the feeding period, (2) the additional costs from feeding the cull cow, and (3) the revenue lost by not selling the cull cow at the time of culling.

When calculating the expected revenue, (1) weight gain, (2) price change from seasonal variations, and (3) price change from grade changes should all be considered. Feed costs, yardage, death loss, and interest should be computed to arrive at an estimate of costs.

Table 3 contains an example partial budget analysis. A canner grade cull cow weighing 1,000 pounds could be sold in November for \$30.50 per cwt. Based on the seasonal relationship in Figure 1, the price in March should be about 10% higher for the same grade, or \$33.55 (\$30.50  $\times$  1.10 = \$33.55). If the cow also improves to the cutter grade, then that price should be 9% higher, or \$36.57 (\$33.55  $\times$  1.09 = \$36.57). The weight gain was projected at 3.00 pounds per day for 105 days.

Feed costs are estimated to be \$0.35 per pound of gain and the total feeding costs are \$0.45 per pound of gain. Subtracting the total additional costs and the lost revenue from not selling the cull cow in November from the expected revenue in March results in an expected net revenue from feeding of \$34 per head. Since no labor was charged to this enterprise, this return is the return to the operator's labor and management.

The return on investment in the cull cow for the duration of the feeding period can be calculated by

$$\frac{\text{Return on Investment} - \text{Net Rev. Int Cost} - \text{Labor \& Mgmt.}}{\text{Initial Cull Cow Value}} \times (365/\text{Days Fed}) \times 100$$

Interest is added back into the net revenue and a charge for operator labor and management is subtracted when calculating return on investment. In

Table 3. A Partial Budget for a Canner Grade Cull Cow in November fed for 105 Days and Slaughtered as a Cutter Grade Cull Cow in March.

	Per head
Additional Revenue	
1315 lbs X \$36.57/cwt	\$481
Less	
Lost Revenue	
1000 lbs X \$30.50/cwt	\$305
Feeding Margin	\$176
Less	
Additional Costs	
Feed	\$110
Yardage	21
Interest	
\$305*.08*105/365	7
Death Loss	
\$481*.01	4
Total	\$142
Net Revenue	34
Feed Costs per Pound of Gain	
\$110/315 lbs	\$0.35
Total Costs per Pound of Gain	
\$142/315 lbs	\$0.45

Return on Investment]

$$\frac{\$34 + \$7 - \$35}{\$305} \times (365/105) \times 100 = 6.9\%^*$$

Break-even Selling Price

$$\frac{\$305 + \$142}{1315 \text{ lbs}} \times 100 = \$33.99/\text{cwt}$$

\* Labor is \$26.25/cow (3.5 hours/cow  $\times$  \$7.50/hr) and management is five percent of the feeding margin (\$176  $\times$  .05 = \$8.80/cow). So, the total charge for operator labor and management is about \$35/cow.

this case the return on investment is 6.9%, a fair return.

The break-even selling price is often calculated to determine the risk involved in the feeding program. If the break-even selling price is considerably below your expected selling price, the program would be less risky than if the break-even selling price was at or above your expected selling price. The break-even selling price is calculated by



SOUTH DAKOTA STATE UNIVERSITY  
Economics Department  
Box 504A  
Brookings, SD 57007

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$$\frac{\text{Break-even Selling Price (\$/cwt)} - \text{Lost Revenue} + \text{Total Additional Costs}}{\text{Final Weight}} \times 100$$

For this example the break-even selling price is \$33.99/cwt. in March.

This is only one example of feeding cull cows. Your costs and revenue will likely be different. However, the partial budget analysis will help you to evaluate the most profitable marketing/management decision for your cull cows. Remember when arriving at your expected prices to consider both seasonal price changes and potential for grade changes. All costs, and not just feeding costs, should also be considered.

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(Shane . . . continued from p.1)

the corn belt was dry and corn and soybean prices rose rapidly. The farmer did not execute his plan when the trigger prices were hit on June 15. The market rose through the rest of the week and a dry weekend was forecast. It rained on Sunday afternoon. Prices crashed on Monday and continued in a steep decline as crop conditions improved every day. After the peak was reached, it became psychologically impossible to execute the plan as thoughts of "the market will come back" prevailed, and the price fell below the trigger prices. In this case, the farmer would have sold 20,000 bushels of corn and 5,000 bushels of soybeans (50% of expected production).

At harvest time, no more storage facilities were available, and this part of the crop was sold on the cash market at \$1.70 for corn and \$4.90 for soybeans. With execution of the plan, 20,000 bushels of corn was worth \$45,000 at \$2.25/bu (basis 5¢ wider than expected), and without the plan, \$34,000 or \$11,000 less. For the soybeans, the basis was 10¢ wider than

expected so the 5,000 bushels would have brought \$31,250 with a \$6.25 price. On the cash market at harvest, the beans brought \$24,500 or \$6,750 less.

Both producers had a marketing plan. They even had it written down. But, without a method for executing the pricing strategy, all the planning time is wasted. Maybe, next year ...? Use the table below to begin your 1995 marketing plan.

Marketing Plan			
Crop	Acres	Yield	Production
Cost of Production		\$ per acre	\$ per bu
Growing			
Harvest			
Interest			
Taxes			
Family Living			
Depreciation			
TOTAL			

Strategies:

1st Trigger Price \_\_\_\_\_ Sell \_\_\_\_\_ bu  
2nd Trigger Price \_\_\_\_\_ Sell \_\_\_\_\_ bu  
3rd Trigger Price \_\_\_\_\_ Sell \_\_\_\_\_ bu

Execution: Call elevator, if basis normal, use cash forward contract; if basis too wide, call broker and sell futures. If still bullish, consider buying call option to offset potential price increases. Pay no more than \_\_\_\_\_¢ option premium.

## ECONOMICS COMMENTATOR

EDITOR: Donald C. Taylor, Agricultural Economist

ECONOMICS DEPARTMENT  
South Dakota State University  
Box 504A  
Brookings, SD 57007  
Phone: (605) 688 - 4141

475 copies of this newsletter were produced at a cost of less than \$100

