Managing for Today's Cattle Market and Beyond

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Retained Ownership of Cattle: Factors to Consider

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Introduction

Cattle producers often follow the same marketing and/or pricing pattern year after year. The dynamics of the U.S. cattle industry, however, make it necessary for cattle producers to evaluate relevant marketing alternatives. Even then, changes often are not made unless something "shocking" occurs. That shock can take many forms, not the least of which is lower prices. Then, there is a danger that producer reaction to the shock may result in inappropriate action which results in less profit, not more.

Retained ownership (holding cattle longer than would "normally" be the case) is one action some producers take in response to low prices at the time they would normally sell their cattle (calves). Retained ownership practices include everything from the use of pastures and crop residues to dry lot feeding and many combinations of those alternatives. Positive returns to retained ownership are possible; so are losses. One needs only a quick look at Table 1 to prove that point.

In deciding whether one should retain ownership of calves, there are some major factors to consider. The focus of this article is on some of those factors. Factors are not necessarily presented in order of importance; what may be important to one producer may not be important to another.

Table 1. Retained Ownership Returns Compared to Selling a 475 lb. Weaned Steer Calf ($/head) from 1980-1996.

Retained Ownership Program	Average	Highest	Lowest
Dry Lot Winter	-17	60	-106
Dry Lot Winter & Summer Grass	30	151	- 63
Dry Lot Winter, Summer Grass & Feedlot	87	164	- 36
Background	32	101	- 61
Background & Feedlot	43	196	- 79
Direct to Feedlot [a]	93	212	- 26

[a] The Direct to Feedlot returns are for a 575 lb steer calf.
Source: Adapted from Cattle-Fax, "Retained Ownership Analysis 6th edition," 1997.

Economics

The extent to which producers maintain flexibility often depends upon personal resource constraints and attitudes toward change. Thus, even though in some years it may be economical to hold calves, some producers may forego the opportunity simply because of personal preferences, tax reasons, or the perceived risks involved. Numerous factors account for making retained ownership decisions.

Producers may hold calves because of unutilized labor and facilities, available feed and pasture, tax purposes, etc. As long as profit incentives are important, probably the most important factor would be comparing estimated extra costs with extra returns (marginal analysis). Other factors constant, producers will market calves under the above alternatives if projected extra returns exceed projected extra costs; i.e., net returns would be expected to increase from some type of yearling/finishing program.

Because of market dynamics, such a decision process should account for risk and uncertainty. Risk occurs because realized values of production and marketing tend to deviate from their average or expected values; variables of concern usually include weight gain, health and death loss, feed costs, cattle prices, and final grade. Consequently, a retained ownership analysis using average (or expected) prices and costs might favor backgrounding calves, but accounting for risk, the optimum decision might be to sell at weaning. Particularly so if the cattle are not hedged.

Budget Analysis

Retained ownership factors such as weaning weights, rates of gain, feed costs, and calf and yearling prices will vary across regions of the U.S. Their variation may be attributed to different cattle breeds and quality, calving seasons, climatic and range conditions, feed sources, and local demand-supply conditions in livestock markets. Thus, retained ownership decisions cannot be a universal recommendation; each region and, for that matter, each ranch setting is unique so as to justify its own recommendations.

Partial budgets have been developed in many areas for specific retained ownership alternatives. Producers should check with Extension personnel in their area for appropriate budgets.

One purpose of these budgets is to calculate breakeven costs for retained ownership alternatives. With breakeven costs, it is useful to subtract them from anticipated revenues so as to calculate net returns for a particular program. Net returns, which can be positive or negative, are often calculated on a dollar per head basis. In general, breakeven cost is:

(1) BE($/cwt) = [Weaned calf price · weaning calf weight + feed cost per head + nonfeed cost per head] ÷ net end weight,

where BE ($/cwt) is breakeven cost in dollars per cwt. Net end weight is merely gross end weight multiplied by a shrink factor (i.e., 0.96 for 4.0 percent shrink). Estimated net returns of retained ownership would be:

(2) NR ($ per head) = [Sale price · net end weight] - [BE($/cwt) · net end weight],

where NR ($ per head) is net returns per head above (below) breakeven cost. Often these net returns are referred to as profits, but they are only profits above variable operating costs. Costs associated with fixed factors of production (land, buildings, etc.) and ownership costs are not included. For positive NR, profits would be allocated entirely to ownership risk if calves were custom fed. If cow-calf producers utilize their own facilities for backgrounding and grazing, then net returns would be allocated to ownership risk, management, and other fixed factors.

Impact on Cash Flow

Changing the sale date of any product will affect cash flow. If calves are not sold in November (which might be the case before retained ownership was used) but now are sold in the following year, the ability to repay loans (lenders also have an interest here), the ability to meet production and personal living expenses, and the amount and payment of taxes all can be affected. Each of these areas should be evaluated to determine both short term and long term consequences. For example, moving the sale of calves from the Fall to after January 1 could affect not only income tax and social security taxes for the current year but also for a year or two later.

Price Risk

The longer any product is held, the more price risk there is. That price risk for cattle may be related to changes in demand and supply factors, changes in animal quality (such as more fat), and changes related to weight. Cattle usually gain weight as they mature. Generally, heavier cattle, especially feeder cattle, receive a lower price per hundredweight than do lighter cattle. If that price risk creates an unacceptable burden or if there is a lack of ability or unwillingness to transfer that risk to someone else by using forward prices, then retaining ownership may not be a suitable alternative. Each person's situation is different.

Futures hedging permits management of price risk in retained ownership, although basis variability changes the success of the hedge. Consider a producer who places weaned steer calves (averaging 575 pounds) directly into a feedlot. Calves are fed for 215 days, with an average daily gain of 3.2 pounds. Table 2 shows the potential net returns (above or below $67.00/cwt breakeven cost) on a per head basis using a futures (sell) hedge. With a hedge price of $68.80/cwt ($71/cwt futures - $2.00/cwt basis - $0.20/cwt commission) the producer realizes a hedged net return of $22/head, with no basis risk. In an unhedged position, if the market falls by $4.00/cwt, the producer realizes a net return of -$24.00/head. Of course, if the market price increases with a sell hedge, the producer forfeits the price gain (hence, one reason for using options).

Table 2. Example of Hedged and Unhedged Net Returns ($/head) of Placing Steer Calves in Feedlot (CME Live Cattle Futures = $71.00/cwt, basis = -$2.00/cwt, commission = $.20/cwt, breakeven cost = $67.00/cwt, and market price declines $4.00/cwt).

	Hedged Price ($68.80/cwt)	Unhedged Price ($65.00/cwt)
Revenue	$834.00	$788.00
Breakeven Cost	$812.00	$812.00
Net Returns	$ 22.00	-$24.00

Note: Net ending weight of finished steers is 1212 pounds, using 4% shrink.

Cattle Performance

If a producer does not have knowledge of how "his/her calves will perform" as they get older, retained ownership can be a disappointment. All cattle are not created equally. Some gain faster than others. Some are more efficient than others. And, some yield a more desirable end product than others. That means some cattle will be more profitable (or yield greater losses) than others. For example, returns from placing calves directly into a feedlot vary greatly depending upon the performance of the calves. Unless you know the performance of your cattle, retained ownership is risky.

Other Enterprises

Retaining ownership of calves can affect other enterprises. Capital and labor requirements for retained calves may be more than some producers can spare. Added inputs may be required (purchased). Or, the returns to labor may be greater elsewhere. Even a trip South in the middle of Winter may not be possible if you "have to take care of the cattle."

Inputs

In some cases, inputs which cannot be sold (or at least not for very much) can be used in a retained ownership project. They simply are low opportunity cost. However, if some inputs can be sold or if other inputs must be purchased, then those considerations

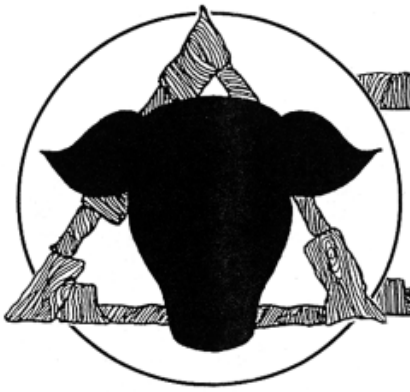
must be included in the decision-making process. Keeping cattle to use surplus feed and labor could end up being very costly, especially if other inputs are purchased. Cattle should be kept to earn profits, not for other reasons. Or, if they are kept for other reasons, know that those reasons are not always "dollars and cents" in nature (or maybe dollars and sense in nature).

You or Someone Else

In some cases, producers are equipped (financially, knowledge-wise and facilities) to carry out retained ownership programs on their own farm or ranch. If retained ownership is to be "farmed out" to someone else (custom performed), it is absolutely critical that all aspects are covered before activities take place. A written contract covering "all things which could go right or wrong" should be used. Consultation with others who have used retained ownership, both at home and away, might provide some guidelines regarding factors to consider and questions to ask.

Conclusion

As indicated, many factors should be considered before retaining ownership of calves. Each factor should be evaluated by each producer for each situation. Calculation of breakeven costs under different retained ownership alternatives will help the producer estimate profit potential. Forward pricing (contracting or futures) should be considered to manage price risk. What worked last year for last year's cattle on the neighbor's farm or ranch may not work for you this year for this year's cattle on your farm or ranch. And, next year the process must be re-evaluated again.



Managing for Today's Cattle Market and Beyond

Retained Ownership In Cattle Cycles

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The existence of cycles in cattle prices represents perhaps the greatest single risk factor facing cattle producers over time. These cattle price cycles affect all segments of the cattle industry. But the cycles may have different effects on cow-calf operators from effects on stocker or backgrounding operators and still different effects on cattle feeders.

This fact sheet examines the historical relationship between cyclical cow-calf profits and other phases of cattle production. If profits and losses in each phase of production are not significantly related, cow-calf producers may be able to avoid or minimize losses in low price times by shifting into other phases of production or through retained ownership alternatives.

Cyclical Profits in Cow-Calf Operations

Beef cattle cycles are typically described in terms of price or production. However, the cyclical nature of profits is the real key to understanding cattle cycles. Furthermore, it is the profits of cow-calf producers in particular which trigger the expansion and liquidation phases of cattle cycles. The inability of cow-calf operators to foresee the future with certainty coupled with a two to four year time lag between the decision to produce and completion of production causes cyclical prices and profits.

Cow-calf profits are dependent on production costs as well as cattle prices. It would be impossible to construct a set of cost estimates for a large number of producers over an extended period of time. Every producer's production costs are different and production practices change over time. It is possible to estimate cost for a given hypothetical operation at one point in time and to adjust those costs for changes in input prices over time. The results will not fit any given producer's cost situation but should provide a general indication of profitability.

In order to examine the relationship between cow-calf profitability through historical cattle cycles and retained ownership possibilities, a 100 cow spring calving operation was budgeted at 1995 cost. All costs including the value of labor and land were included in the initial budget. Cost estimates and production assumptions for the hypothetical operation are outlined in Appendix A. The various cost components were adjusted for price changes back to 1949 through the use of appropriate cost price indices in order to derive historical cost estimates.

The net returns shown in Table 1 were calculated by subtracting the yearly simulated cost per hundred pounds of calf sold from the Oklahoma City steer and heifer calf price for 400-500 pound calves during September to November. The primary objective in the simulation was to examine the changes in profitability over time and not to determine the absolute level of profit in any given year.

The cost estimates are certainly not accurate

enough to determine whether prices were $1/cwt above or below break-even for any given year. But the cyclical trends are quite clear. The larger losses of the 50's caused larger cuts in cow numbers. The smaller losses of the 60's merely slowed the growth in beef cows. Five years of profitability followed the two years of leveling of cow numbers in the mid 60's. The four years, 1974-1978, were very unprofitable years. Not only was the price break in 1974 the most severe of the period but production costs increased dramatically during this period as well. As a result of these losses, the reduction in cow numbers was much greater than in the two preceding cycles.

From 1980-86, the simulated cow-calf operation suffered the longest string of unprofitable prices for the time period examined. From 1979 to 1981, prices fell by almost 30% and cost escalated due to very high interest rates. The long string of losses was the likely reason for a delayed buildup in cattle numbers. From 1987 to 1993, a relatively long string of profits occurred. However, as we know all too well now, the buildup in cow numbers which began in 1990 resulted in another 30% drop in prices from '93 to '95 and a return to red ink for the cow herd.

Profits in Stocker Operations

Profits in stocker or backgrounding operations are not necessarily tied to cattle production and price cycles. The value of a stocker calf is derived from the expected value of that calf when it goes in the feedlot anywhere from 4 to 10 months after it is placed on pasture. Overall price levels of stocker calves in the fall, for example, are a reflection of the expectations of feeder cattle prices the following spring and of the value that the stocker operator placed on his pasture, investment, labor, management ability, etc. If prices and cost turned out as expected when stocker calves were purchased, there would be no "pure" profit from stockering.

Of course there are profits and losses in stocker operations. But because stocker decisions are "short run" decisions in comparison to the "longer run" cow-calf decisions, the pattern of profitability over time is different for stocker and cow-calf operations. But the existence of profits or losses are nonetheless "windfall" in nature resulting from the risk of making production decisions based on an unknown future.

Estimated net returns from a hypothetical summer and winter stocker operation are also shown in Table 1. Estimates were based on a procedure similar to that outlined previously for the cow-calf operation. The Oklahoma City feeder steer price for the time and weight of placement was used in calculating each year's cost. The estimated break-even for each system was compared to the appropriate steer price for the weight and time at marketing. The initial cost estimates and production assumptions are given in Appendix A.

The approach to estimating costs through time ignores possible overall changes in productive efficiency. It also ignores the production risks associated with unanticipated levels of production costs. For example, if drought conditions caused stocker gains to drop well below average one particular year, the figures in Table 1 might show a profit whereas stocker operators actually experienced a loss. But the procedure should give reasonably representative profit estimated resulting from market price changes. Simulated results are nonetheless useful in analyzing cattle enterprise profit relationships associated with cattle price cycles.

As can be seen from Table 1, there is a strong tendency for both cow-calf and stocker operations to be affected similarly by the sharp breaks in the market, both up and down. But after these breaks, cow-calf production remains either profitable or unprofitable over an extended period of time depending on the phase of the cycle. Stocker operations seem to show a more or less random pattern of profit and loss between sharp market breaks regardless of whether cow-calf operations are in the profit or loss phase of the cycle.

Profits in Cattle Feeding

Profits in cattle feeding are similar in nature to those in stocker or backgrounding operations. The value of the feeder animal is derived from the expected value of the fed animal resulting from the operation at sometime in the future. The overall price level for feeder cattle at any point in time is a reflection of the expectations of cattle feeders concerning fed cattle prices at the end of the feeding period. The expected slaughter price is adjusted for the expected cost of gain, of which feed cost is a large component, and other costs such as interest on investment, labor, death loss, etc. The feeder also places some minimum return on his management which is used in calculating the maximum amount he will pay for feeder cattle.

At any given point in time, the market would be expected to reflect the full value of feeder cattle in relation to their potential in the feedlot. Overall, cattle feeders would be expecting to earn a competitive management return, but there wouldn't be pure profit

at the expected average cost of gain and future slaughter price. So any profits over and above the return to management would be unexpected or windfall in nature.

Simulated profits from three different cattle feeding enterprises are also shown in Table 1. Two are yearling feeding operations (summer and winter) based on 700 pound purchase weights and 1100+ pound sale weights. The other is a calf feeding enterprise assuming 500 pound calves are placed on feed in the fall and are marketed at 1100 pound steers the following summer. Cost estimates for 1995 are shown in Appendix A.

The cattle feeding enterprises profit patterns are obscured by generally profitable cattle feeding returns generated by the analysis prior to 1970. The early time period profitability is likely due to production levels being held constant at 1995 levels throughout the analysis. Even during the generally profitable cattle feeding time from 1949-72, major "down" years generated losses for one or more of the feeding alternatives. In all but one of the major "up" years, each feeding alternative was positive. After 1972, there seemed little relation among profits on a year to year basis except for the major break years.

Cyclical Profit Relationships

The relationships among profits associated with the various cattle enterprise are made more clear by comparing all the enterprises in Table 1. The major "up" break years (20% or more increase in price) are: 1950, 1957, 1958, 1972, 1978, 1979, and 1987. Note that in all but one of these years, all cattle enterprises showed a profit.

The major "down" break years as defined by a year-to-year decline of 20% in price were 1952, 1953, 1974, and 1995. In these years, the majority of cattle enterprises showed substantial losses with the exception of 1952. There are no obvious profit relationships among the various enterprises other than in major break years.

Management Implications and Retained Ownership

It is apparent that cow-calf operators can reduce their risk of loss during the unprofitable phase of the cycle provided they have the flexibility to shift some or all resources into stocker or cattle feeding operations. Likewise, during the profitable phase of the cycle, there are more consistent profits in cow-calf operations than in stockers or cattle feeding. However, there would still appear to be a slightly better chance for profits in all phases of cattle production during the rising phase of the price cycle. And there are somewhat greater risks of loss in all phases on a falling or depressed market.

All phases of production have a good chance for large profits during the sharp upturns of the market. But there would seem to be no way through diversification to avoid the large losses which accompany the sharp downturns in market prices.

Another strategy for dealing with the major break in cattle prices might be to extend the ownership of cattle through the loss years. This strategy is available only for the cow-calf or stocker operator, however.

The potential for avoiding losses by extending ownership on fall calf crops is shown in Table 2. Each calf crop is matched with the calf feeding option and the winter stocker-fall sale of fed cattle option. The profit figures combine the stockering and feeding alternative with the initial cow-calf net return. Notice that it was possible to reduce losses in all but 2 of the 18 cow-calf loss years (1985 and 1994) through at least one phase of retained ownership. However, in only 4 of these years was the initial loss completely overcome by profits. It should also be noted that in the first profitable cow-calf year following the loss years, retained ownership resulted in significant profit improvements.

Summary and Conclusions

Any conclusions drawn from a study of past profit relationships in cattle cycles must be considered with several limitations in mind. History does not necessarily repeat itself and each of the so-called cattle cycles are shaped by unique factors which will alter the profitability of retained ownership strategies. Furthermore, the retained ownership decision is unique to each individual producer's cattle type, financial situation and risk bearing ability. So, general recommendations need to be individualized. Despite these limitations, some general observations seem apparent and may be useful in developing future cattle cycle management strategies.

1. Calf-cow profits tend to be cyclical in nature with consistent year to year profits during the rising phase of the price cycle followed by consistent losses during the cyclical decline in prices.
2. Cattle feeding and stocker operation profits tend to

be consistently positive in the initial rise in prices signaling the cyclical price upturn, and tend to be consistently negative on the initial fall in prices, but tend to be random up and down in between breaks in the markets.
3. Cattle feeding and stocker profits are strongly positively related to cow-calf profits on the sharp market "up" and "down" turns but have only a weak positive relationship to cow-calf profits and among themselves during the gradual up-trend and down-trend years.
4. Retained ownership of calves may reduce the initial losses in cow-calf and stocker operations on market breaks but shows little hope for recovering all of those initial losses.

As a result of the general conclusions, cattle producers might consider the relevance of the following guidelines to their particular operation:

1. Utilize any existing flexibility to shift resources among cow-calf, stocker and feeding operations at various stages of the cycle.
2. Consider creation of a more flexible cattle operation if at all possible to facilitate risk management.
3. Emphasize the cow-calf phase of the business during the profitable years of the "up" phase of the cattle price cycle.
4. Consider retained ownership into stocker and cattle feeding operations which have some chance for profit during almost sure loss years for cow-calf operations.
5. Continue retained ownership strategies until the return of profitability, retaining the first profitable calf crop. Thereafter, return to emphasize the cow-calf operation as almost sure cow-calf profits on the upturn are preferable to the up and down stocker and feeding profits.
6. It should be clear that stocker and feeding profits are most sensitive to the buy-sell price margin. Stockering and feeding can be profitable during high prices as well as low, but much of the risk is price related. For this reason, price risk management strategies for both cattle and feed should be considered. Such strategies may enhance profits during the phases of the cycle where retained ownership has been successful or at least reduce the risk of retaining calf ownership during the time of most financial distress for the calf producer.
7. Manage financial equity and cash flow in anticipation of profits and losses associated with various phases of the cycle.

Table 1. Net Returns Summary for Cattle Production Alternatives by Year Marketed

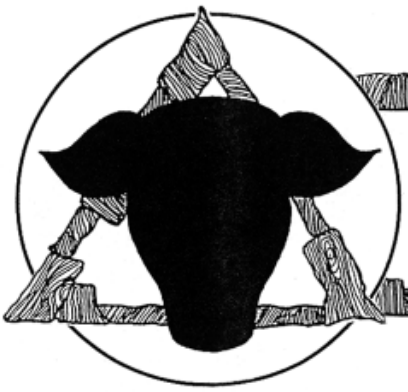
	Cow-Calf Net Returns	Winter Stockering Net Returns	Summer Stockering Net Returns	Summer Yearling Feeding Net Returns	Winter Yearling Feeding Net Returns	Calf Feeding
Year	$/cwt	$/cwt	$/cwt	$/cwt	$/cwt	$/cwt
1949	2.35		-1.65	6.04		
1950	11.71	4.66	4.11	7.38	7.17	9.57
1951	15.44	8.50	.05	5.95	11.15	10.68
1952	2.66	1.59	-6.29	3.92	5.23	4.42
1953	-6.86	-3.87	-4.04	4.26	-1.30	-.06
1954	-4.48	2.13	.21	4.42	5.41	4.95
1955	-3.75	1.02	-1.85	1.51	3.94	2.54
1956	-3.97	-1.16	.35	6.50	1.19	3.89
1957	2.26	1.89	8.26	4.53	3.64	6.10
1958	11.53	5.34	1.99	2.15	3.71	5.61
1959	7.86	2.92	-1.36	.82	4.06	3.17
1960	3.61	1.12	-1.92	1.52	2.99	1.99
1961	4.66	2.16	.54	1.98	2.75	1.81
1962	6.22	1.77	1.56	6.07	3.73	4.49
1963	2.91	.07	-.70	.82	-.78	1.00
1964	-2.12	-2.50	-.57	4.15	-1.45	1.31
1965	1.23	1.67	3.27	4.69	4.46	6.99
1966	3.30	2.00	-.01	1.73	4.55	3.86
1967	3.05	.63	.93	3.10	.44	3.39
1968	4.98	2.42	.84	3.58	2.78	4.54
1969	9.14	6.04	1.57	1.57	7.12	9.28
1970	10.85	5.76	.56	.09	3.94	5.58
1971	13.82	3.82	4.40	4.38	4.83	6.16
1972	21.01	1.44	8.07	5.27	4.58	8.11
1973	24.43	13.64	4.23	-1.46	10.37	16.36
1974	-20.85	-7.72	-12.20	.36	-3.59	-1.42
1975	-24.52	-1.63	5.73	14.75	10.79	17.42
1976	-19.72	5.22	-5.75	-2.59	3.27	3.82
1977	-16.68	1.68	-.13	1.91	2.96	3.41
1978	8.43	13.08	9.92	4.92	12.68	14.50
1979	18.97	27.89	-7.15	-5.87	17.73	12.57
1980	-13.46	-6.59	-.06	3.88	-3.95	2.40
1981	-35.56	-3.98	-4.35	-.17	-2.47	5.18
1982	-41.82	-.97	-1.74	-1.14	6.95	7.37
1983	-43.35	3.65	-10.22	-4.72	5.73	6.33
1984	-44.53	-1.19	-1.14	.08	8.08	4.71
1985	-30.17	.87	-7.75	-3.48	-4.56	-5.90
1986	-20.03	-7.32	1.57	5.84	-3.17	-.85
1987	7.43	6.55	9.88	2.29	6.70	9.22
1988	3.89	6.65	-1.11	-4.98	4.34	.86
1989	1.00	-.36	.24	-3.42	.38	-2.09
1990	9.85	5.01	2.49	.32	1.79	.33
1991	8.93	8.53	-9.31	-12.24	-.47	-5.33
1992	4.02	-2.34	.15	1.35	.27	-1.13
1993	5.73	8.75	-2.96	-7.62	6.62	2.24
1994	-13.67	.12	-13.42	-10.01	-5.23	-10.50
1995	-38.06	-6.28	-12.80	-2.80	-3.42	-6.71
1996		-9.28			-1.02	

Table 2. Accumulated Profits or Losses From Retained Ownership of Yearly Calf Crops

Year	Cow-Calf Net Returns $/Cwt.	Cow-Calf +Winter Stockering +Yearling Feeding $/Cwt	Cow-Calf +Winter Calf Feeding $/Cwt.	Cow-Calf +Winter Stockering $/Cwt.
1949	2.35	14.39	11.92	7.01
1950	11.71	26.17	22.39	20.21
1951	15.44	20.95	19.86	17.03
1952	2.66	3.05	2.59	-1.21
1953	-6.86	-.31	-1.91	-4.73
1954	-4.48	-1.96	-1.94	-3.46
1955	-3.75	1.59	.14	-4.91
1956	-3.97	2.45	2.13	-2.08
1957	2.26	9.76	7.88	7.61
1958	11.53	15.27	14.70	14.45
1959	7.86	10.50	9.85	8.98
1960	3.61	7.74	5.42	5.77
1961	4.66	12.50	9.16	6.43
1962	6.22	7.11	7.22	6.29
1963	2.91	4.56	4.22	.41
1964	-2.12	4.24	4.87	-.45
1965	1.23	4.96	5.09	3.23
1966	3.30	7.04	6.69	3.93
1967	3.05	9.05	7.59	5.47
1968	4.98	12.59	14.25	11.01
1969	9.14	14.99	14.72	14.90
1970	10.85	19.04	17.01	14.66
1971	13.82	20.53	21.94	15.26
1972	21.01	33.19	37.37	34.65
1973	24.43	17.07	23.01	16.71
1974	-20.85	-7.73	-3.42	-22.48
1975	-24.52	-21.89	-20.70	-19.30
1976	-19.72	-16.12	-16.31	-18.03
1977	-16.68	1.32	-2.18	-3.60
1978	8.43	30.45	21.00	36.33
1979	18.97	16.27	21.38	12.39
1980	-13.46	-17.61	-8.28	-17.44
1981	-35.56	-37.67	-28.18	-36.53
1982	-41.82	-42.89	-35.49	-38.17
1983	-43.35	-44.46	-38.64	-44.54
1984	-44.53	-47.15	-50.43	-43.67
1985	-30.17	-31.66	-31.02	-37.49
1986	-20.03	-11.18	-10.81	-13.48
1987	7.43	9.10	8.28	14.08
1988	3.89	.11	1.80	3.53
1989	1.00	6.33	1.34	6.01
1990	9.85	6.14	4.52	18.38
1991	8.93	7.94	7.80	6.59
1992	4.02	5.14	6.26	12.76
1993	5.73	-4.16	-4.77	5.85
1994	-13.67	-22.75	-20.38	-19.95
1995	-38.06			-47.34

Appendix A
Cattle Enterprise Production and Cost Assumptions for 1995

	Feed/Hay	Pasture	Other	Labor	Direct Ownership Cost	Breeding Stock or Calf Interest	Other Interest	Land	Death Loss	Total	Cull Cow Credit or Calf Cost	Net Cost
						($/Cow or Hd.)						
Cow-Calf: 85% calf crop, 1.75 acres per cow, 10% yearly replacement rate, 2% breeding stock death loss, 490 lb. steer weaning weights, 440 lb. heifer weaning weights, 342 lbs. calf weight sold per cow per year.	96.25	100.22	16.14	42.00	9.87	38.82	15.31	66.00		384.61	-35.58	349.03
Winter Stocking: 400 lbs. purchase and 690 lb. sale weight, 1.61 lb. gain/day over 180 days, Sept-Nov. purchase, March-May sale, 2% death loss, 2 head per acre stockering rate.	52.06	41.41	21.95	18.00	19.96	14.80	4.20	11.00	5.48	190.85	274.07	464.92
Summer Stockering: 450 lb. purchase and 667 lb. sale weight, 1.45 lb. gain/day over 150 days, March-May purchase, sales Sept.-Nov., 2% death loss, 3 head per acre stcokering rate.	20.00	38.00	17.00	6.00	4.00	17.85	1.91	7.26	7.92	119.43	396.21	516.14
Custom Feeding Summer Yearlings Steers: 700 lb. purchase and 1136 lb. sale weight, 2.42 lbs/day over 180 day feeding period, March-May purchase and Sept.-Nov. sale, 1% death loss.	166.81		35.00			27.61	5.45		5.11	239.98	511.28	751.26
Custom Feeding Winter Yearling Steers: 700 lb. purchase and 1117 sale weight, 2.31 lbs/day over 180 day feeding period, purchase Sept-Nov and March-May sale, 1% death loss.	166.81		35.00			24.41	5.45		4.52	236.19	452.06	688.06
Custom Feeding Steer Calves: 500 lb. purchase and 1100 lb. sale weight, 2.20 lbs/day over 272 day feeding period, Sept.-Nov. purchase and June-August sale, 2% death loss.	219.44		45.00			28.03	10.82		6.85	310.14	342.58	652.72



Managing for Today's Cattle Market and Beyond

Cooperation in Cattle Marketing

By
DeeVon Bailey, Utah State University

One strategy producers can use for possibly adding value to cattle is to cooperate with other market participants. This cooperation may be with other producers (horizontal cooperation) or with firms at different points in the marketing channel (vertical cooperation).[1] The latter occurs when feedlot operators and meat packers cooperate. Cooperation is generally motivated when a situation or conditions exist which require producers and/or cattle processing or feeding firms to combine resources to solve a mutual economic problem(s).

Formal cooperation may include contracts between market participants or the formation of marketing/processing cooperatives or marketing associations. Joint marketing is an important method of cooperation for cattle producers and often takes the form of packaging cattle in pools for sale. Packaging means cattle are merchandized by putting them together in groups with particular characteristics which meet the needs of particular buyers. One focus of this paper is on joint marketing with an emphasis on pooling.

The current cattle price crisis and large margins between retail and farm level prices for cattle during the last two years have increased interest of some cattle producers in integrating into processing and/or other marketing activities along the marketing channel. A discussion of considerations that must be accounted for when contemplating integrating into other marketing activities besides production also is presented here.

Why Consider Joint Marketing?

Most cattle operations in the United States are relatively small. For example, in the 1992 Census of Agriculture it was reported that farms with cattle have fewer than 41 head of beef cows, on the average. This suggests that the average cow/calf operator, after accounting for weaning percentage and held replacement heifers, probably has fewer than 30 calves to sell each year. With so few calves to sell, packaging cattle into lots that are optimum sized and are uniform by sex and weight is virtually impossible for the majority of cow/calf operators at least on an individual basis.

Different research projects conducted at Utah State University and Kansas State University have found that the number of cattle in a lot influences the price buyers are willing to pay for them.[2] In the KSU study it was found that the optimum size for a lot of feeder cattle sold through a regular ring auction was 50-55 head. In the USU study it was found that the optimum lot size for cattle sold through a video auction was approximately 240 head. Cattle are sold in larger sized lots, on the average, at video auctions as a service to buyers. In video auctions buyers often have difficulty pooling lots for shipment. This is unlike a ring auction where buyers can pool the lots they buy on a given day. The larger lots sold at video

auctions also are a way to more efficiently match the supply of cattle on a given day with demand, especially for feedlots. In the USU study it was reported, based on interviews with cattle buyers, that feedlot operators prefer cattle lots large enough to fill at least one pen (typically between 100-250 head depending on the size of the feedlot). Buying lots large enough to fill feedlot pens isolates health problems that could occur if lots are mixed. It also reduces the logistical problems associated with purchasing cattle numbers to fit pen sizes.

Creating uniform lots by weight and sex also can improve the price buyers are willing to pay for the cattle. Another study conducted at USU concluded that buyers at a video auction paid approximately $1.70/cwt. more for uniform lots of cattle than they did for lots which were not sorted by sex and weight. This means that a 500 lb. calf sold in a uniform lot would receive $8.50/head more than a similar animal sold in a nonuniform lot. Cattle of the same weight and sex can go directly into feedlot pens and receive the same feed ration. Consequently, buyers often are willing to pay more for uniform lots than nonuniform lots because the need to sort the cattle after delivery is reduced or eliminated.

Organizing a Cattle Pool

Since most cattle producers do not have enough cattle to effectively package their cattle, they may consider pools as an alternative. Organizing a cattle pool takes interest and commitment on the part of producers who are involved. These are elements found in all successful pools. One of the best things a group of producers interested in starting a pool can do is to examine what other successful pools have done as a starting point for developing their own pool.

Facilities where cattle can be unloaded, weighed, sorted, pooled, and loaded for shipment are a basic requirement for this type of joint marketing. It may be that these types of facilities are not already available. If so, the group may consider building and paying for such facilities by charging a fee to those using the facility.[3]

The successful operation of a pool depends much on the good will that exists between its members as well as the economic incentives which exist for pooling. The group must establish rules regarding how decisions will be made relating to how cattle will be handled, sorted, and included or excluded from the a pool. Some producers may be unhappy if they believe their cattle are superior to other members of the pool. Concerns also will arise when cattle are "sent home" because they do not meet specifications to be included in the pool. Successful pools establish firm rules for operating the pool. While causing concerns at first, these rules improve cooperation among pool members after members recognize, accept, and respect the rules since they know they will be enforced. If producers do not like the rules of the pool they can attempt to change the rules through the channels established by the group or they can simply choose not to participate in the pool.

One calf pool in Utah operates in basically the following fashion:

1. Producers who are members of the pool indicate the number of steer and heifer calves they will provide to the pool that year. This becomes a marketing agreement between the pool and the producer.[4]
2. The calves are prepriced through a video auction using videos and descriptions of "representative" calves. The calves normally are sold in six pools--three for steers and three for heifers, based on different weights. For example, the three steer pools may have average weights of 450 lbs., 525 lbs., and 575 lbs. The pools normally range in size from 150 to 250 head. Prepricing through a video auction eliminates the need to gather the cattle to obtain bids. Producers also know the day delivery will take place and the price they will receive before the cattle come off the range.
3. On the day of delivery, producers are responsibleto bring their calves to the unloading/loading facilities. After unloading, the calves are brand inspected, sorted for different pools, the sorted groups for each producer are weighed, and then are placed into their respective pools. Records are maintained on the number and weights of cattle for each producer in each pool. After the pool is completed, the cattle are loaded and shipped.
4. The pool is paid by the video auction company and the pool issues a check to each producer based on the total weight they contributed to each calf pool.

Producers in this pool believe that pooling has been a very successful method for them to increase the price they receive for their calves. No members of the pool have more than 200 mother cows and some of the producers have fewer than 10 calves to contribute to

the overall pool.

Pooling offers both challenges and opportunities. As stated before, participants must be willing to abide by the rules established for the pool. For example, only cattle meeting pool specifications for breed, weight, sex, or other specific characteristics will be accepted. Producers also must be willing to accept the pool price for their cattle and agree with the marketing methods used by the pool. If a producer cannot abide by these restrictions, they should not participate in the pool.

Processing Cooperatives

Low cattle prices have caused some producers to consider integrating into processing[5] or other activities along the marketing channel. This is motivated by what they see as a relatively large farm to retail price spread. Some of these producers are considering forming cooperatives to build processing facilities and compete directly with the large meat packers. Some may seek out niche markets where competition may be less keen.

A cooperative is a special type of corporation which allows agricultural producers to pool their resources and also seek other types of investment as a means to gather enough capital, in this case, to build beef processing facilities. Cooperatives are designed to allow producers to make joint marketing decisions. Cooperatives have been very successful in improving farmers' incomes[6] in some agricultural industries.

When considering forming a cooperative, producers need to ask themselves some important questions such as: 1) Is the current market noncompetitive? 2) Will we be able to raise sufficient capital to compete in this market? 3) Can we as producers supply the processing facilities with enough commodity at a competitive price to operate the facilities efficiently? 4) Will there be sufficient profits in this industry over the period of our investment to justify entering the industry? 5) Is there a strong enough commitment among producers to make the necessary investment in terms of money and commodity during the investment period (say 10-20 years) to justify the cooperative?

The first question relating to competitive markets is a basic one. Economic theory says that when a market is competitive, over a period of time no profits above a normal rate of return on assets will be made by firms in the industry. The beef packing industry is one of the most often studied industries in the United States. Even with all the research which has been conducted relating to the industry, there is still no clear evidence that the beef packing is not competitive. At the least there is no evidence to suggest beef packers exploit cattle producers or the public in a big way. This suggests that market entrants competing directly against large beef packers will likely be facing a basically competitive market and should not expect returns that are abnormally high.

Ward reports that considerable economies of size exist in beef packing. Those plants with the lowest production costs are slaughtering approximately 1 million head per year. This conclusion is supported by the dramatic decrease in the number of small packing plants in the United States during the last 15 years. The implication is that large amounts of money will be needed to be competitive in this business and that the amount of capital required may preclude producers from integrating into processing.

Obtaining the numbers of cattle required to keep a modern processing facility efficient is a difficult task due to cyclical, seasonal, and competitive influences. The larger the number of cattle needed, the larger the geographic area that will be served by the cooperative, and the more producers that will be needed to participate. This suggests that plants should be located near areas where large numbers of cattle exist. This would likely place a cooperative in direct competition with large packers already in high density cattle areas. Locating in low density cattle areas would increase transportation costs.

How profitable will a cooperative be? To be successful, a cooperative must either compete with large existing packers on a cost basis, which means it must be as large and have just as good a marketing network as large packers, or it must find markets where large packers are unwilling to compete on a cost basis (niche markets). This might be accomplished by offering superior customer service or developing a product which is somehow different than regular beef products. The beef market still is driven largely by costs. Consequently, differences in the costs of production between a cooperative and a large beef packer still should not be extremely large.

Finally, cattle producers normally are more willing to cooperate with each other during bad times than they are during good times. A cooperative will require a high degree of commitment from its members for a number of years to assure an adequate supply of cattle to keep the plant operating efficiently. This could probably best be accomplished by requiring an upfront investment from members of the cooperative and also requiring them to sign a

marketing agreement with the cooperative.

Processing cooperatives are not a common phenomenon in the cattle industry. When considering forming a cooperative, particular care should be given to the ability to increase the income of cattle producers over the long run. The long-term commitment of the potential members also should be considered carefully. Producers considering a cooperative should contact their extension livestock marketing specialist to examine these and other issues relating to the formation of cooperatives.

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Schroeder, T., J. Mintert, F. Brazle, and O. Grunewald. "Factors Affecting Feeder Cattle Price Differentials." ***Western Journal of Agricultural Economics***, 13(1):71-81

Ward, C. E. "Market Structure Dynamics in the Livestock-Meat Subsector: Implications for Pricing and Price Reporting." In ***Key Issues in Livestock Pricing: A Perspective for the 1990s***. W. Purcell and J. Rowsell, editors, Research Institute on Livestock Pricing, Blacksburg, VA. December 1987.

[1] Formal cooperation between packers and feedlots is referred to by different terms. They are sometimes called strategic alliances or captive supplies. These topics are discussed elsewhere in these materials and will not be discussed in this fact sheet.

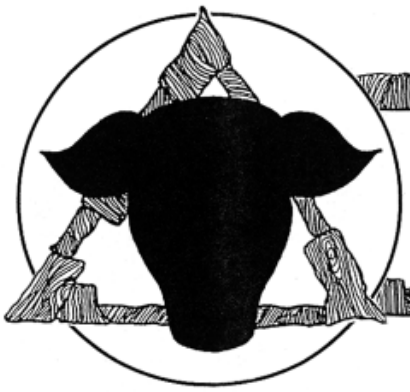
[2] For example, the KSU study found that optimum sized lot of cattle received between $4/cwt. - $6/cwt. more than cattle that were sold in single head lots at Kansas auctions during 1986 and 1987.

[3] Some groups have sought and received aid from private citizens and/or local governments to build such facilities in the form of donated property, use of machinery, donated labor and materials (especially from members of the group), etc.

[4] Most of these producers are on similar breeding programs and calve at approximately the same time.

[5] The term "processing" is used in the sense of a combination of packing and fabrication (i.e., boxed beef) as is done by the large beef packing companies.

[6] For example, a number of marketing cooperatives in the fruit industry have been very successful (e.g., Sunkist and Ocean Spray). Some livestock cooperatives also have been very successful especially in dairy and poultry (e.g., American Milk Producers Inc. and Goldkist).



Managing for Today's Cattle Market and Beyond

Replacement Heifer Sales

By
Emmit L. Rawls, The University of Tennessee

The sale of commercial replacement heifers is one method of adding value to heifers which in many cases would be sold as feeders. Some producers feel that a commercial cow-calf operation should always keep its best heifers. While this is probably true, it is also possible that in many cases the next-best heifers in the herd can help other producers upgrade their herds. Heifers which are selected and prepared for sale as replacements usually command a premium over what they would bring as feeder animals. The size of the premium is affected by many factors, such as the stage of the cattle cycle and the attitude of beef producers regarding culling and herd expansion or contraction. Other factors include breed or cross, frame, muscling, disposition and EPD (Expected Progeny Difference) for factors such as birth weight, milk, weaning weight, yearling weight and carcass attributes. For bred heifers, attributes of the sire, especially ones with low birth weight EPDs, can influence value.

The cost to prepare a bred or open heifer would be similar to those for a stockering/backgrounding operation. These would vary with the region of the county. In addition, there would be costs for the required immunizations, preparatory exam and bulls/ artificial insemination. The sale commission would also be higher than that usually charged for feeder cattle.

Production Plans

Plans for a sale of bred and/or open heifers should begin at least 12 to 18 months before the sale. If feeder cattle are normally sold in the fall, heifers intended for sale should be retained and grown to breeding/calving age. Producers and others considering holding a replacement heifer sale should plan the sale for a time when heifers are within no more than 7 months of calving. If open heifers are sold in the same sale, that means marketing them a few months prior to the normal breeding season. If most beef operations calve in the spring, late fall works well for bred heifers. For open heifers, a spring sale just before breeding season may be more timely.

Attention should be given to the breeds or crosses to be sold. Breeds or crosses which sell well as feeders also sell relatively well at replacement heifer sales. Even though cross-bred heifers have some superior "cow traits," some producers may want to use straight-bred heifers. The sale of registered heifers in a sale of commercial heifers is generally not recommended, since the commercial-heifer buyer is typically not in the market for registered heifers. The production plan for the heifers should include a forage-based growing program so that the heifer is in moderate flesh at sale time. Heifers which are too thin or too fat or fleshly do not command a premium price.

In selecting the sires for heifers to be sold as bred heifers, consider the factors that are economically important to the potential buyer. It is important that the heifer have a live calf with minimal calving

difficulty. Therefore, it is best to use bulls or the semen of bulls of known low birth weight EPDs. Heifers bred to bulls with no records are very likely to bring less than bulls with records of desirable traits. Heifers should have had a good immunization program based on the local veterinarian's recommendation. It is helpful if all heifers in the sale have had the same immunization program, since one buyer may purchase heifers from more than one consignor. In a well-organized sale this should be a requirement.

In addition to the sale of replacement heifers from herds of cow-calf producers, it is possible to purchase heifers which can be grown and developed for sale as bred or open replacement heifers. Some sales require that heifers sold as open be owned a minimum of 120 days, and that purchased heifers sold as bred be owned at the time of breeding or 120 days prior to sale, whichever is longer. Be sure to purchase heifers which are in demand by cow-calf operators. Otherwise, management should be the same as heifers raised for sale. Since purchased heifers have greater genetic variability, sale prices will likely be somewhat less than those for raised heifers.

Requirements For Consignment

Plans for the sale should be made at least 12 to 18 months before the sale itself. Eligibility for selling heifers in the sale should be agreed upon by the steering committee of the group or organization conducting the sale. The more strict these requirements, the smaller the initial participation. The requirements should be publicized well ahead of consignment dates. These requirements may include some or all of the following:

1. Number of head - minimum or maximum
2. Minimum days of ownership
3. Vaccination requirements
4. Parasite control
5. Surgery - dehorning
6. Implants or use of MA
7. On-farm inspection by independent third party - size, frame, muscling, flesh
8. Reproductive traits - pelvic size, reproductive tract score, open or stage of pregnancy (months)
9. Guarantees regarding whether heifers are open or bred
10. Weight or body - condition scores (minimums)
11. Blemishes (pinkeye)
12. Temperament
13. Sire requirements - EPDs, etc.
14. Certification - ear tags, health certificates, etc.

Persons or organizations interested in holding replacement heifer sales should contact their County/ State Cooperative Extension Service for details or recommendations on possible requirements.

Sale Management

Arrangements should be made for the location of the sale. Auction markets are suitable, if an effort is made to have them cleaned up following the regular sale day, with suitable bedding placed in the pens. Other sales facilities similar to those used for purebred sales work well, but some type of handling facilities may be needed.

A sales agreement is needed between the facility management and the sponsoring organization to avoid disagreements later. The agreement should include which parties are responsible for each aspect of the sale. Items for consideration include advertising, labor to move cattle into and out of the facility, liability for damages to personnel or cattle, auctioneer, commission charges for handling the sale and commission to be charged the consignors, collection and distribution of sale proceeds, and feed and care for the cattle overnight or until all cattle are loaded.

A decision should be made regarding the committee responsible for grouping the heifers for sale and the method of establishing the order of sale. Market management can often be helpful in working up the sale order and grouping heifers for sale. The sale should be started with heifers which are above average quality. Occasionally, if the market management has heifers in the sale, they may be willing to offer a group of their heifers to start the sale as a gesture of goodwill. After that, the sale order may be determined by a random drawing of consignors. Once each consignor has had a chance to sell, the rotation begins again. Depending on lot size, each consignor has a chance to sell heifers at various times during the sale. If there are fewer open heifers than bred heifers, they may be offered in the middle of the sale or after the bred heifers. Commingling of heifers should only be done with consignor's permission. If the association or sponsoring association can provide assistance in moving heifers during the receiving, sales and loading process, it can reduce the cost of marketing to the consignors. The number of workers agreed upon and the times they will work can help prevent misunderstandings with the barn management. Responsibility for printing the sale and other

materials essential for the sale should be established well ahead of the sale date.

Guarantees

Most sale of bred and/or open heifers have guarantees as to the heifers being bred or open. Such guarantees should be specific. For example, if open heifers are found by veterinary exam to be bred within 30 days of sale, or if bred heifers are found by veterinary exam to be open within 30 days of sale, a financial settlement should be made by the seller. This may range from $40 to $100 per head or may be negotiable. Of course, all heifers should be pregnancy-tested within 30 days prior to sale.

Sales Follow-Up

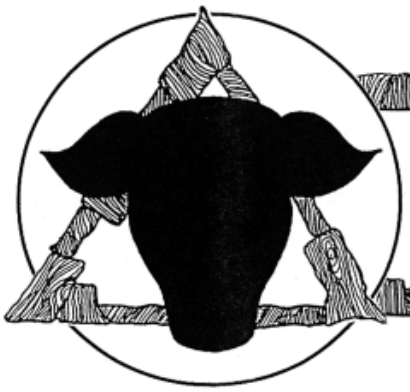
Sales of open or bred heifers can sometimes result in dissatisfied customers if an open heifer is found to be bred or a bred heifer is found to be open. Ideally, sale requirements and guidelines will allow a means for the resolution of problems and complaints. In addition, the sponsoring organization may wish to solicit comments from buyers, so that improvements to the sale, if needed, may be considered for the future.

References

Tennessee Cattlemen's Association
610 West College Street, Suite 204
Murfreesboro, Tennessee 37130

Upper Cumberland Replacement Heifer Sale
District IV Extension Office
390 S. Lowe Ave, Fountain Court, Suite 9
Cookeville, Tennessee 38501-3567

"The Kentucky Certified Replacement Heifer Program"
D.J. Patterson and K.D. Bullock
University of Kentucky Animal Science Department
Lexington, Kentucky 40546-0215



Managing for Today's Cattle Market and Beyond

Preconditioning Calves for Feedlots

By
DeeVon Bailey, Utah State University and
Norris J. Stenquist, Utah State University

What is Preconditioning and Why Is It Done?

With cattle prices the lowest they have been in over a decade, cow/calf producers are investigating methods to increase the value of the calves they produce. Preconditioning calves is one possible method for adding value to calves. Preconditioning prepares calves to enter feedlots by putting them through a health program of different vaccinations, weaning them from their mothers, and getting the calves on dry feeds. Preconditioning is designed to mitigate the transitional period between weaning and dry feeding for calves entering feedlots. By increasing the calf's resistance to respiratory diseases prior to weaning and boosting that resistance at weaning where exposure to pathogens is generally minimal while calves are still at the ranch, they are better prepared to enter the marketing system or other phases of beef production. A preconditioning system is designed to significantly reduce sickness, lower death loss, reduce the number of calves pulled to sick pens, reduce losses in weight gain, and increase feed efficiency once cattle arrive at a feedlot or other destination.

As calf weaning weights have increased in the cattle industry over the past decade more calves are going directly into feedlots for a growing/finishing program. This allows for many calves to reach market weight and finish by the time they are 14-15 month of age. Cattle that have been properly handled prior to being placed in a feedlot have a much greater potential to perform efficiently in a feedlot and be profitable. This should add value to the owner of the cattle whether ownership is retained by the producer or the cattle are sold to a feedlot operator or other buyer. Consequently, preconditioning does add value to calves since it reduces costs and risks to buyers. Buyers normally are willing to pay premiums for preconditioned calves, but these premiums vary depending on market conditions. Producers' costs for a preconditioning program also vary according to feed costs and the price of cattle, as will be explained latter.

Example of a Preconditioning Program

The following is an example of a preconditioning program developed by Dr. Norris J. Stenquist at Utah State University. This is presented as an example and anyone considering starting a preconditioning program should consult with their local livestock extension specialist and a veterinarian before beginning a program. This will assure that the program is designed for the producer's own ranch, financial, and climatic conditions.

Steps in a Preconditioning Program

A. Shortly after birth:

Calves are vaccinated against the Clostridial organisms (Blackleg, etc.) when they are worked at approximately 2-4 months of age. Products labeled for subcutaneous administration are used to reduce injection site tissue lesions. A minimum of a 4-way vaccine (Blackleg, Malignant Edema, Black Disease, and Clostridium Sordelli) should be used. Other clostridials can be a problem in certain areas, so again, consult your local veterinarian for specific recommendations. Vaccinating against more pathogenic agents than necessary places additional demands on the calf's immune system and this is another reason for consulting a veterinarian before starting a preconditioning program.

B. At 21-30 days pre-weaning:

Calves should be vaccinated against IBR-PI3-BVD-BRSV and only vaccines that have been attenuated with label approval for use in calves nursing cows should be used. Also, vaccinate against Pasteurella haemolytica, Haemophilus somnus, Clostriduim haemolyticum, Leptospirosis and other diseases if a problem in your area.

C. At weaning:

Place calves in a well-fenced area with free choice access to good quality hay and clean water and avoid weaning calves into dusty lots. The animals should then be vaccinated against IBR-PI3-BVD-BRSV (use a modified live vaccine). Do not allow vaccinated calves to be exposed to pregnant females. After weaning, begin supplemental feeding by gradually increasing the level of supplement fed over a 5-7 day period. The cattle can then be turned out on good quality pasture or pasture plus good quality hay when possible. Producers should be sure to monitor cattle closely for health problems. The following are two possible feeding program options for the calves:

Option 1. Feed 2 lbs./head/day of a 41% crude protein equivalent.

Option 2. Feed 1% of body weight of a 14-16% crude protein ration/head/day (example: 500 lb. calf - 5 lbs.)

D. Market calves for delivery a minimum of 45 days after weaning.

Vaccinations 21-30 days pre-weaning will provide optimum levels of resistance against the challenge of pathogens at weaning. However, if it is not possible to gather calves at that time, producers could follow one of the two alternatives listed below:

Option A. The calves could be vaccinated against IBR-PI3-BVD-BRSV at weaning with an attenuated vaccine with label approval for use in calves nursing cows. With this option the calves should also be vaccinated against Pasteurella haemolytica. Also, booster the IBR-PI3-BVD-BRSV with a modified live vaccine 14 days later.

Option B. With this option, vaccinate against IBR-PI3-BVD-BRSV when the calves are worked with an attenuated vaccine with label approval for use in calves nursing cows and booster with a modified live vaccine at weaning.

Deworming also may need to be done if the calves have been on wetlands. Due to stress, the calves will likely gain only an average of 1 lb./head/day for the first 30 days in the program and 1.75 lbs. - 2 lbs./head/day thereafter. One feed ration used in the USU program was 5 lbs. of barley and 10 lbs. of alfalfa hay/head/day (about 11.5 lbs. of hay/day if one accounts for waste). During the spring of 1996, feed costs for this ration would have been about $0.72/head/day. Feed costs vary by location and will influence the financial success of the preconditioning program.

Economic Considerations Related to Preconditioning

Before considering a preconditioning program, producers must estimate the likely costs and the potential economic benefits obtained from the program. The potential gains from a preconditioning program include any premium buyers are willing to pay for preconditioned calves and the added weight calves will have after going through a preconditioning program compared to selling at weaning. The costs associated with preconditioning calves in a 45+ day program include the costs of handling, vaccinations, death loss, and additional feeding costs.

Another cost for which producers must account is the price decline which is normally experienced as cattle become heavier. After completion of a preconditioning program, calves will weigh more than if they are newly weaned. Consequently, even though calves may be paid a premium because they are preconditioned, buyers will still usually pay a somewhat lower price on a per lb. basis for say a 530 lb. preconditioned calf than they would for a 500 lb. preconditioned calf. One estimate of how calf prices decline as weight increases is provided by research conducted at Utah State University which found that calf prices declined an average of $0.055/cwt.[1] for each additional pound of weight. This estimate will be used later in this paper to provide a method to estimate the market price for calves as their weight increases.

Preconditioning Example

An example is provided in Table 1 to illustrate how producers can estimate break-even prices for calves placed in a preconditioning program. Producers should use their own estimates of prices and costs to do this estimation. One important factor not considered in Table 1 is any risk associated with changes in overall market prices between weaning and when calves finish the preconditioning program. This risk is an important consideration. Producers may wish to reduce this risk by forward pricing calves using futures contract(s) or a regular cash forward contract before placing the calves in a preconditioning program.

In the example presented in Table 1, it is assumed that 500 lb. calves could be sold for $65/cwt. at weaning. The calves are anticipated to gain an average of 1.33 lbs./day over the 45 day program to yield a 560 lb. animal at completion of the program.

The profitability of a preconditioning program is related to the cost of feed and the price of calves. This is true whether the calves are being sold to a buyer or whether the producer places them in a retains ownership program. Obviously, as feed costs decline less money is needed to cover costs and the break-even price also declines. Because of stress, the calves will not perform very well during the first part of their preconditioning program (1 lb. gain/day in this example). This causes the cost of gain to be abnormally high for the calves during the first part of the program. In our example, costs of gain are $0.93/ lb. (Item 16 in Table 1). This indicates that preconditioning programs have the most potential to be profitable when calf prices are relatively high so that the relatively high cost of gain associated with a preconditioning program can be covered. As calf prices increase and or feed costs decline the probability of a profitable preconditioning program increases because each pound of calf produced either is more valuable and/or costs less to produce.

It is also interesting to note that the incentive for feedlots to pay higher premiums for preconditioned cattle increases as calf prices increase because calves are more valuable and there is more incentive to reduce death losses if possible. It is also the case that the value of preconditioned calves in a retained ownership program will also increase with market prices because the risk associated with retained ownership is greater the higher prices are. Since a large portion of the death loss experienced with calves occurs during the first few weeks following weaning, as calves become more valuable buyers are willing to pay more for preconditioned calves in order to shift the risk associated with death losses to producers who conduct preconditioning programs. This suggests that preconditioning programs will be the most profitable during periods of high calf prices such as existed during 1989-93. The converse also suggests that during periods of low calf prices preconditioning programs may not be profitable, as is the case now. Producers retaining calves will also have more incentive to precondition them during periods of high prices since death losses are reduced.

Summary

Preconditioning programs require planning, management, and some market analysis. They do, however, offer the potential of adding a significant amount of value to calves, especially during periods when calf prices are relatively high. Before considering a preconditioning program, consult with your veterinarian, livestock specialist, and extension economist to consider the health, management, and marketing conditions that may impact the success of your program.

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[1] This estimate is taken from a study using video auction data between 1987 and 1992. It should be regarded only as an average since market conditions change and this adjustment for weight may increase or decrease especially as feed costs change.

Table 1. Break-Even Analysis for Calves Placed in a 45-Day Preconditioning Program.[a]

Item	Cost/Price	**Your** Estimate
Costs of Program:		
1. Weight Going Into Program (lbs./head)	500	_____
2. Price at Beginning of the Program ($/cwt.)	$65	_____
3. Current Value/head 1x2	$325	_____
4. Interest Rate Assumed	10.00%	_____
5. Labor Costs ($/day/head)	$0.12	_____
6. Cost of Vaccinations ($5/head)	$5.00	_____
7. Feed Costs ($/day/head)	$0.70	_____
8. Yardage Costs ($/day/head)	$0.15	_____
9. Interest Per Day on Calf 4 x 1/365 x 3	$0.09	_____
10. Death Loss ($/head) 1%x(3+(5+6+7+8)/2)	$3.28	_____
11. Average Interest on Other Costs ($/day/head) 4 x 1/365 x (5+7+8+(6/12))	$0.0002	_____
12. Number of Days in Program	45	_____
13. Average Weight Gain (lbs./day/head)	1.33	_____
14. Cost Per Day in the Program ($/day/head) 5+7+8+9+11+((6+10)/12)	$1.24	_____
15. Total Cost of Program ($/head) 12 x 14	$55.94	_____
16. Cost of Gain ($/lb. of gain) 15/(12 x 13)	$0.93	_____
Break-even Analysis:		
17. Projected Weight After Preconditioning (lbs./head) 1+(12 x 13)	560	_____
18. Break-even Price for Preconditioned Calves ($/cwt.) (3+15)/17x100	$68.04	_____
Estimated price for 560 lb. calves:		
19. Price Discount Due for Each lb. Gained Beyond Initial Weight Going into the Program ($/cwt.)	$0.055	_____
20. Price Discount Anticipated for Weight Gain ($/cwt.) 19 x (17-1)	$3.30	_____
21. Estimated Price for 560 lb. Steers Assuming No Premium for Preconditioned Calves[b] 2 - 20	$61.70	_____

[a] The values used in this table are for conditions in Utah during the Spring of 1996. Numbers in the "Item" column correspond to specified calculations indicated throughout the table. Complete items 1, 2, 3, 4, 12, and 13 first to facilitate the other calculations.

[b] This is the estimated price for 560 lb. calves assuming that overall market prices did not change during the preconditioning program. If premiums are offered for preconditioned calves, the premium could be added to this price to obtain a new estimate.

Feeding and Marketing Cull Cows

By
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Introduction

Cull cows often are overlooked as an important source of income to the cow-calf enterprise. Depending upon the relationships between cull cow and calf prices, and the herd culling rate, cull cow receipts generally account for 15-30 percent of income from the cow-calf enterprise. 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 they are culled from the herd. 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.

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

Price Seasonality

Cull cow prices generally follow a consistent seasonal pattern. Prices normally are 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 the year. If overall cattle prices are rising sharply or declining sharply in a year, then this price pattern may not be as apparent. However, by analyzing prices over a number of years the seasonal price patterns can be determined. Figure 1 contains a graph of the seasonal price pattern at Sioux Falls, South Dakota for 1985-1994 for cutter grade cows. Prices at many other locations, such as Omaha, Nebraska and Billings, Montana have very similar seasonal patterns.

It may be profitable, by simply considering this seasonal pattern, 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, it may be most profitable to sell cows that are culled during calving season or early summer. However, the other two factors (cull cow grades and feed costs) still must be considered.

Cow Slaughter Grades

Prices for cull cows are based on their USDA carcass grade or their expected carcass grade. The most common grades, in order of the least amount of marbling to the greatest amount of marbling are: Canner, Cutter, Utility, and Commercial. Price differences between these grades impact the price of cull cows directly if a producer sells on a carcass weight and grade basis, and indirectly if the cow is sold on a live weight basis. These price differentials vary

from year to year and also from month to month within a year. The differential is wider in higher priced years and in the fourth quarter of the year. Average price differentials between grades at Sioux Falls from 1985 - 1994 are displayed in Table 1. These differences also are consistent with those at the Omaha and Billings markets.

Figure 1. Seasonal Cull Cow Prices at Sioux Falls, South Dakota, Cutter Grade, 1985-1994.

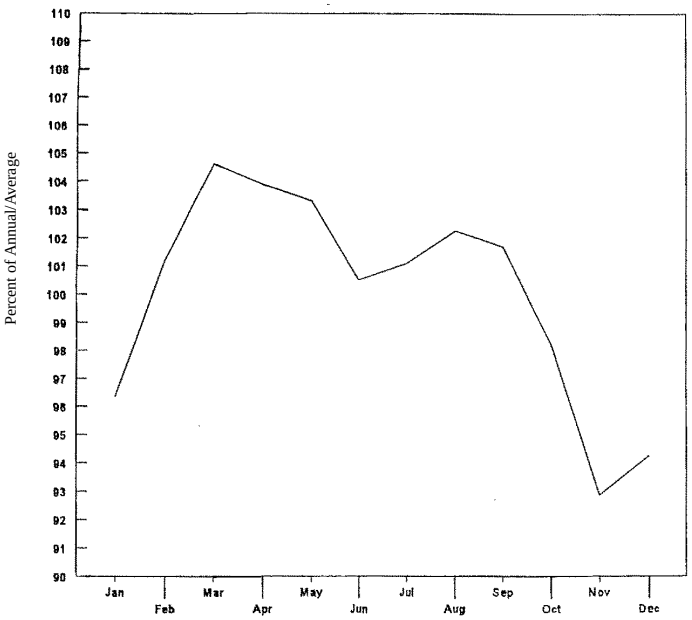

Table 1. Percentage Price Increases Between Cull Cow Grades at Sioux Falls, 1985-94.

	Cutter	Utility	Commercial
Canner	10%	18%	24%
Cutter		8%	14%
Utility			6%

Source: Computed from Feuz .

In a 1993 study at South Dakota State University (Pritchard and Burg) 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 high concentrate ration of 75 percent corn grain and 15 percent corn silage on a dry matter basis. The cows 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.

In the trial at South Dakota State, initial condition of the cows did not affect the rate of gain, but it did have an effect on the degree of marbling. From this trial it would appear that most cull cows could be expected to improve one grade following a 60-100 day high concentrate feeding program, and that many could improve two grades.

Cull cows that are fed on primarily a roughage diet would not obtain the same rates of gain, nor grade changes. A ration of alfalfa-grass hay should produce about 1.5 pounds per day gain over a 60-90 day feeding period, assuming the cows were fairly thin at the start of the feeding period (Wagner). It is unlikely that the cows would improve more than one slaughter grade on this feeding program.

Cost of Feeding

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

Feed costs will vary depending upon the price of feed and the feedstuffs used in the ration. Proper procedures should be used to balance a ration for the cows and determine the cost of feed. A cost of around

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

Days Fed	USDA Slaughter Grade					
	Canner	Cutter	Utility	Commercial	Standard	Choice
0	64	29	7			
50	18	57	24		1	
77	8	21	65	4	1	1
105	0	19	74	6	1	

Source: Adapted from Pritchard and Burg.

$0.20-$0.25 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 $350 and if you are paying 10% interest and you plan on feeding the cow for 90 days, the interest charge would be $8.63 per head [$350 x .10 x (90/365) = $8.63].

Partial Budget Analysis

The proper manner to consider all of these factors is to construct a partial budget and evaluate if it would be more profitable to feed the cull cow rather than selling when culling takes place. 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 (opportunity cost).

When calculating expected revenue, weight gain, price changes due to seasonal variations, and price change because of grade changes all should be considered. Feed costs, yardage, death loss, and interest should be computed to estimate feeding costs.

The break-even selling price often is 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 adding the total feeding costs to the value of the cull cow at the start of the feeding period and then dividing this sum by the expected ending weight (allowing for shrink) of the cull cow.

Table 3. Expected Returns ($/head) and Optimal Days on Feed from Feeding Cull Cows on a High Concentrate Ration with Varying Feed Costs and Cull Cow Prices.

September-October Canner Grade Cull Cow Prices				
Corn Price	$30/cwt	$35/cwt	$40/cwt	$45/cwt
$3.00/bu	-$15 84 days	$10 98 days	$38 112 days	$69 112 days
$2.75/bu	-$7 84 days	$20 98 days	$50 112 days	$81 112 days
$2.50/bu	$8 98 days	$36 112 days	$67 112 days	$98 112 days
$2.25/bu	$18 98 days	$49 112 days	$79 112 days	$110 112 days
$2.00/bu	$35 112 days	$66 112 days	$96 112 days	$128 126 days

Table 4. Expected Returns ($/head) from Feeding Thin Cull Cows on a Roughage Ration for 98 days with Varying Feed Costs and Cull Cow Prices.

September-October Canner Grade Cull Cow Prices				
Hay Price	$30/cwt	$35/cwt	$40/cwt	$45/cwt
$80/ton			-$13	$0
$70/ton		-$15	$0	$13
$60/ton	-$15	-$1	$13	$27
$50/ton	-$2	$12	$26	$40
$40/ton	$11	$25	$39	$53

Sensitivity Analysis

How sensitive to feed costs and cull cow prices are the returns to cull cow feeding? Cull cow prices were varied from $30/cwt. to $45/cwt. for the price of a Canner grade cull cow in September and October (Tables 3 & 4). The price in November would be somewhat lower due to the seasonal pattern.

The price of corn grain was varied from $2.00/bu to $3.00/bu, and corn silage and concentrate prices were adjusted relative to corn prices. The expected returns from feeding cull cows on a high concentrate ration are displayed in Table 3. The most profitable number of days on feed, in 14 day increments also is displayed in the table. The price of alfalfa/grass hay was varied from $40/ton to $80/ton and the expected profit from feeding a thin, Canner or Cutter grade cow for 98 days on a roughage ration is displayed in Table 4.

There are several observations that can be made from analyzing the results of this sensitivity analysis. Obviously, the higher the cost of the feed stuffs for a particular ration, the lower the expected return to the cull cow feeding program. Not so intuitive, is the finding that returns to feeding cull cows increase with higher cull cow prices. The reason this happens is that the seasonal price pattern and the price differentials between grades remains relatively similar in periods of low and high cull cow prices. Therefore, if cull cow prices increase by 10 percent, there will be a greater price and revenue increase based

on a $40/cwt cull cow prices compared to a $30/cwt cull cow price.

The final observation is that, in most cases, returns from the high concentrate feeding program will exceed returns from the roughage feeding program. The exception to that is in periods of relatively low cull cow prices, when corn is relatively high priced compared to hay. In that case, the roughage ration provides higher expected returns.

Summary

Cull cow receipts are a valuable source of income to most cow-calf enterprises. In periods of relatively low cattle prices, properly managing and marketing cull cows may mean the difference between a profit and a loss for the year. In this paper, the seasonality of cull cow prices was discussed and the price differentials between cull cow grades were reported. By timing cull cow sales to take advantage of seasonally higher prices, and by feeding thin cull cows to improve their slaughter grade, revenue from cull cows can be increased significantly.

Feed costs vary from year-to-year, mostly depending upon the price of feeds. They also vary within each year, depending upon the feeding program.

The profit potential of various cull cow feeding and marketing alternatives can be properly evaluated through the use of a partial budget. Costs and revenue will likely be different each year. However, the partial budget analysis will help to evaluate the most profitable marketing/management decision for cull cows. Remember, when arriving at expected prices, you should consider both seasonal price changes and potential for grade changes. All costs, and not just feeding costs, should be considered on the cost side of the budget.

The feeding programs discussed in this paper are not the only available alternatives. Evaluate feed resources and analyze programs that may work for you. Your financial future in the cow-calf industry will be somewhat dependent upon the income generated from cull cows.

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