Preconditioning

Does it pay cow-calf producers? What's it worth to buyers?

Story by
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Why don't more calf sellers precondition their cattle? If preconditioning pays, why hasn't it become standard practice for a majority of cow-calf producers? And what about the calf-buyer? Can the stocker operator or cattle feeder afford to pay a premium for preconditioned calves? If it doesn't enhance profitability for both buyer and seller, why hasn't the idea of preconditioning simply gone away?

The industry has been talking about it long enough. The concept of implementing health protocols to prepare calves for the postweaning production period has been around for nearly 40 years. It was during the mid-1960s that Iowans pioneered the concept of special preconditioned calf sales. And about that same time, preconditioning was the primary topic for a national conference hosted by Oklahoma State University (OSU). It's been a topic of controversy, too, which probably explains why industry-wide adoption of preconditioning has not occurred.

Kansas State University (K-State) agricultural economist Kevin Dhuyvetter isn't surprised. He says at least part of the reason is because preconditioning doesn't work the same for every cow-calf producer. Operations vary greatly with regard to herd size, weaning weight, facilities and other resources. In addition, preconditioning-related research has been contradictory. Some studies, Dhuyvetter says, have been less than scientific, making it harder for producers to interpret results.

Current beef industry trends appear to support more widespread adoption of management practices like preconditioning. Dhuyvetter says value-based marketing, food safety concerns, source and process verification, and individual animal identification (ID) are issues that are compatible with management practices such as preconditioning. He believes more producers will adopt preconditioning programs — if they are profitable.

Table 1: Economic analysis of preconditioning calves

		Alternative scenarios*			
A. Traditional management income	**Baseline**	**ADG (-)**	**ADG (+)**	**D.L. (+)**	**Cost (+)**
1. Weaning weight, lb.	550	550	550	550	550
2. Shrink, %	4.0	4.0	4.0	4.0	4.0
3. Sale weight, lb.	528.0	528.0	528.0	528.0	528.0
4. Weaning price, $/cwt.	$110.00	$110.00	$110.00	$110.00	$110.00
5. Gross revenue, $/head	**$580.80**	**$580.80**	**$580.80**	**$580.80**	**$580.80**
B. Preconditioning management income	**Baseline**	**ADG (-)**	**ADG (+)**	**D.L. (+)**	**Cost (+)**
6. Beginning (weaning) weight, lb.	550	550	550	550	550
7. Days from weaning to marketing	45	45	45	45	45
8. ADG, lb./day	1.33	1.00	1.67	1.33	1.33
9. Ending weight, lb.	610.0	595.0	625.2	610.0	610.0
10. Shrink, %	2.5	2.5	2.5	2.5	2.5
11. Death loss, %	0.25	0.25	0.25	1.00	0.25
12. Sale weight, lb.	594.8	580.1	609.5	594.8	594.8
13. Weaning price, $/cwt.	$110.00	$110.00	$110.00	$110.00	$110.00
13a. Price adjustment for seasonality, $/cwt.	1.80	1.80	1.80	1.80	1.80
13b. Price adjustment for weight, $/cwt.	-5.76	-4.50	-7.03	-5.76	-5.76
13c. Price adjustment for fleshiness, $/cwt.	0.00	0.00	0.00	0.00	0.00
13d. Preconditioning premium, $/cwt.	4.00	4.00	4.00	4.00	4.00
14. Final price, $/cwt.	$110.04	$111.30	$108.77	$110.04	$110.04
15. Gross revenue, $/head	**$654.48**	**$645.70**	**$662.96**	**$654.48**	**$654.48**
C. Preconditioning costs, $/head	**Baseline**	**ADG (-)**	**ADG (+)**	**D.L. (+)**	**Cost (+)**
16. Interest (cattle, feed, supplies) @ 6%	$4.50	$4.50	$4.50	$4.50	$4.55
17. Health supplies and medicine	8.00	8.00	8.00	8.00	12.00
18. Death loss	1.59	1.57	1.61	6.37	1.59
19. Labor and equipment	4.50	4.50	4.50	4.50	4.50
20. Feed, hay and pasture	35.00	35.00	35.00	35.00	40.00
21. Marketing costs (tags, commission, etc.)	3.00	3.00	3.00	3.00	5.00
22. Total cost	$56.59	$56.57	$56.62	$61.37	$67.64
23. Cost per day	$1.26	$1.26	$1.26	$1.36	$1.50
24. Cost of gain, $/cwt.	$84.79	$108.53	$69.45	$91.94	$101.33
D. Comparison: traditional vs. preconditioning	**Baseline**	**ADG (-)**	**ADG (+)**	**D.L. (+)**	**Cost (+)**
25. Traditional gross revenue, $/head	$580.80	$580.80	$580.80	$580.80	$580.80
26. Preconditioning gross revenue, $/head	$654.48	$645.70	$662.96	$654.48	$654.48
27. Increased revenue, $/head	$73.68	$64.90	$82.16	$73.68	$73.68
28. Less preconditioning costs, $/head	$56.59	$56.57	$56.62	$61.37	$67.64
29. Net return from preconditioning, $/head	$17.08	$8.33	$25.55	$12.30	$6.04
30. Breakeven price, $/cwt.	$107.16	$109.86	$104.57	$107.95	$109.02
31. Breakeven premium, $/cwt.	$1.12	$2.56	($0.20)	$1.91	$2.98

***Scenarios:** ADG (-) = low ADG; ADG (+) = high ADG; D.L. (+) = high death loss; and Cost (+) = high cost.

Evaluating profitability

Dhuyvetter urges producers to evaluate the profitability of preconditioning for their operations by projecting budgets that fit their particular situations. For example, he suggests that the costs and projected income from a preconditioning program, including costs from vaccinating, weaning and holding calves for 45 days, be compared to the projected income resulting from selling calves directly off the cow without any preweaning vaccinations.

For this example, assume that the calves would wean at an average weight of 550 pounds (lb.). Allowing for 4% shrink would result in 528 lb. of sale weight per head if the cattle were pulled from their mothers and hauled to market. If the calves brought $110 per hundredweight (cwt.), the gross revenue would be $580.80 per head. This information, representing baseline income from nonpreconditioned calves, is summarized in section A of the accompanying table.

To estimate the revenue from preconditioned calves, we will assume they gain an average of 1.33 lb. per head per day. According to Dhuyvetter, research suggests likely gains of 1 lb. per head per day during the first 30 days and 2 lb. per head per day during the last 15 days of the 45-day period between weaning and the sale of preconditioned calves. By sale day, their average weight should be 610 lb. Shrink for preconditioned calves should be less than for fresh-weaned calves, so Dhuyvetter suggests a shrink factor of 2.5%.

Potential death loss must be considered since the cow-calf producer maintains ownership for an extra 45 days. Losses are possible but should be low when animals remain on the farm or ranch and are not commingled with animals from other herds. And the health status of the calves should be enhanced due to vaccinations administered as part of the preconditioning program. Dhuyvetter estimates death loss at 0.25%. Accounting for shrink and death loss, the sale weight of preconditioned calves is estimated at approximately 595 lb.

"When estimating the price for the preconditioned calves, there are numerous factors that need to be taken into account," Dhuyvetter explains. "First of all, they will be marketed at a different time of the year, and, thus, prices need to be adjusted for seasonal patterns."

Assuming the calves were weaned in mid-October, historical price patterns suggest slightly higher prices when preconditioned calves are sold (45 days later) around the first of December. Based on a seasonal price index reflecting prices paid for 500- to 600-lb. steers (Dodge City, Kan., 1992-2001), Dhuyvetter would expect calves worth $110 per cwt. in October to bring about $1.80 per cwt. more in early December.

However, the average sale weight of the preconditioned calves is 67 lb. heavier than the weaned calf sale weight. So the second factor to consider in estimating the sale price is a discount for weight. In the baseline example, Dhuyvetter assumes a discount of $5.76 per cwt. If the calves become too fleshy, further discounts may be warranted. With average daily gain (ADG) estimated at 1.33 lb. per head, excess fleshiness is not expected.

The third price factor to consider is how much of a premium might be expected for preconditioned calves. Based upon multiple years of reports of premiums associated with preconditioned calves sold during the fall through livestock auction markets and video auctions, Dhuyvetter says an average premium of $4 per cwt. is realistic. Considering this premium, the seasonal price advantage discussed above, as well as the discount for heavier weights, the price of preconditioned calves is estimated to be $110.04 per cwt. That's essentially the same as the price of the weaned calves, because the seasonal adjustment and preconditioning premium served to offset the discount associated with heavier calves.

"Producers may not receive the $4-per-cwt. premium simply by selling their calves through their normal outlets," Dhuyvetter notes. "Reported premiums are most often associated with 'special calf sales' or programs that certified the preconditioning program."

Estimating costs

The information affecting baseline income from preconditioned calves is itemized in section B of Table 1. The estimated costs are shown in section C. Interest on the full cost of the weaned calf for 45 days is included, because income could have been used to pay off debt or invested elsewhere if calves had been sold at weaning. Interest is charged for vaccination costs and half of the feed. This is based on the assumption that the operator buys the feed as it is fed, and, on average, costs are incurred halfway through the 45-day period. The value of labor and equipment was estimated at 10¢ per head per day.

According to Dhuyvetter, preconditioning studies suggest that costs for a 45-day program will likely fall within the range of $35 to $60 per head. Because actual costs may vary considerably, he recommends producers estimate their own costs for health supplies (including vaccinations), death loss, labor and equipment. Marketing costs would include fees associated with selling the calves through a process-verified "program" for which preconditioning is required.

Dhuyvetter calls the costs represented in the table realistic, if not a little bit on the high side. Efficient producers might shave $5-$10 off the estimated total cost of $56.59 per head. Based on that total, the cost of preconditioning is $1.26 per head per day. Even if the costs were higher than average, section D of the table shows a $17.08 per head net return from preconditioning (line 29).

Because the values in the table represent projections, it may be useful to consider what would happen to the profit picture when the primary variables have different values. The table's grey columns offer outcome projections allowing for lower ADG, higher ADG, higher death

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Preconditioning *(from page 27)*

Producers may have to change the way they market calves by participating in "certification" programs or special preconditioned calf sales, to garner the sought-after premiums.

loss and higher preconditioning costs, respectively.

The column on the far right shows cost increases roughly 20% more than the baseline budget for feed and health. The daily cost per head is $1.50, compared to $1.26 in the baseline budget. The higher cost scenario represents the least net return, but the return is still positive.

The example shows how a cow-calf producer can profit from preconditioning if the calves earn a premium of $4 per cwt. Can a cattle feeder really afford to pay it? In fact, he probably could pay more.

Dhuyvetter says numerous studies have shown that the health status of preconditioned calves is significantly improved, resulting in less sickness (up to 40% less) and fewer deaths. In some cases, carcass quality is improved. Better health and feedlot performance means less medical expense and lower costs of gain. Improved carcass quality boosts revenue when cattle are marketed on a value-based system.

Calculating premiums

It stands to reason that preconditioned calves warrant a premium, but how much should it be? Dhuyvetter says cattle feeders appear to be willing to pay premiums of $2-$5 per cwt. for preconditioned calves. This probably doesn't represent the true value of preconditioning. There has been limited work done in this area, but a Colorado State University (CSU) study has compared the net returns of feeding (NRTF) preconditioned calves to that of calves with unknown health and processing history. The NRTF of the preconditioned calves were $46 to almost $50 per head higher. Other studies have suggested feedlot returns to preconditioning in excess of $60 per head.

"Based on limited data, it would appear that the value of preconditioned calves is somewhere between $40 to $60 per head in the feedlot. That equates to $7- to $11-per-hundredweight premiums that could be paid," Dhuyvetter says. "But even after preconditioning, there is risk involved. There is no guarantee that calves won't get sick. Because of the risk, buyers aren't going to give all of the added value (from preconditioning) back to sellers."

For the cow-calf producer, preconditioning appears to be a strategy for adding value that is worth consideration. However, Dhuyvetter reminds producers that the added value is dependent upon receiving a price premium. Producers may have to change the way they market calves by participating in "certification" programs or special preconditioned calf sales, to garner the sought-after premiums.

While returns to the feeding sector justify paying more for preconditioned calves, buyers are reluctant to pay full-value premiums because of risk. As the reputation and integrity of preconditioning programs increase, Dhuyvetter expects premiums to increase and to approach the full value of preconditioning.

"If sellers think they aren't getting enough for their preconditioned calves," Dhuyvetter suggests, "they should consider retaining ownership through the finishing phase to capture the added value."