

# Early Weaning Pays

Research review, economic model add up the savings.

by *Miranda Reiman*

It's too good to be true. That's what many producers think when they're told they can sell heavier, higher-quality calves while reducing cow costs with one simple management strategy.

Animal scientists give validity to what otherwise seems an unlikely possibility.

"Early weaning beef calves is a tool that can be used to improve overall profitability," says Ivan Rush, University of Nebraska professor emeritus. Rush recently authored a research review of more than 20 papers on the topic and developed a spreadsheet (see Table 1) to determine the dollar advantage.

"Primarily, I used research where they have direct comparisons between normal-weaned and early-weaned calves, along with a blend of industry information," he says.

Jeff Heldt, field cattle consultant with Land O' Lakes Purina Feed, works with several customers who have moved up their weaning by 90 days, on average.

"From the economic standpoint there are really two components: dollars for feeding the calf and the flip side of that, the dollars saved by not having to feed the cow," he says.

The calf side of the equation is affected by biological changes from weaning at an earlier age and having to feed a ration when animals would normally still depend on their mothers.

## Better efficiency, health and grade

"Early-weaned calves are around 10% more efficient versus an older calf," Rush says. That value is represented in his calculations by feed conversion of 5.2 pounds (lb.) of feed per lb. of gain compared to 5.7 lb. for older calves.

Heldt's real-world examples mirror that, showing daily gains in the 3.5- to 3.75-lb. range.

"With a high-grain diet we're able to take advantage of feed efficiency. We can really get a lot of performance out of those calves," he says. Calves nursing cows only gain about 0.85 lb. per day, Heldt adds.

These early-weaned calves tend to maintain better health. Researchers speculate it has to do with some retained maternal immunity and being more adaptive to new situations when they're in that younger, "curious" stage.

"It seems like the younger age they are, the healthier they want to stay," Heldt says. "That can add up significantly from a dollars-for-medicine standpoint and just better performance."

Rush admits that goes against popular belief.

"Traditionally, we have always thought it's a real challenge to wean those young calves," he says. "With proper health and nutrition, which is easy to obtain, those calves have considerably less morbidity than normal-weaned calves."

The spreadsheet lists death loss at 1.5% for both groups, only to account for the longer time on feed for the early-weaned calves, Rush says. Other figures include yardage, ration costs and non-feed costs, such as implants. With a \$141-per-ton ration, the earlier-weaned calves will cost about \$3.10 more to feed (\$267.25 vs. \$264.10).

"In the majority of the studies the early-weaned calves are more efficient, and thus the feed cost and breakevens are often lower even if they are fed longer," Rush says.

In his example, the calves are either on feed for 243 days or 212 days, and breakeven is slightly positive for early-weaned calves at 79¢ compared to 81¢ for their normal-weaned counterparts.

That's before the carcass values are taken into account.

"If the calves are going to go to a feedyard rather than being fed on the ranch, that facility, first and foremost, has to be quality-oriented," Heldt says. "Early weaning increases carcass quality. To take advantage of that, they have to be willing to market cattle on some type of quality grid and not just live or in the meat."

In Purina early-weaning projects, customer calves achieved 64% *Certified Angus Beef*® (CAB®) brand acceptance on average, compared to the regional rate of 16% for the same time period.

Rush says research shows inconsistent results, but tends to draw the same conclusion.

"The percentage of calves grading above average Choice favored early-weaned calves fed high-concentrate diets soon after weaning," he says. As the Choice-Select spread increases, that becomes an increasingly larger part of the profitability for this model. In his example, for all breeds and brands, Rush figured that would add at least \$2.85 per head.

Another marketing bonus for younger calves is the ability to sell them earlier in the year. Looking at five-year seasonal averages, Rush estimated that is worth \$28.23 per head.

So the calves are worth more, but the real bonus shows up in cow advantage.

## Pasture, supplement savings

"Early weaning has a major advantage in allowing the cow to gain in body condition while utilizing less forage," Rush says. When calves are weaned just 60 days earlier, it appears cows gain up to a full body condition score (BCS). Using National Research Council (NRC) requirements, Rush shows a \$30 savings by not having to feed those cows ahead of the subsequent calving season.

Heldt suggests that's conservative and estimates a \$40 savings in winter feed costs.

"That's just a feed number. There would be a labor number, too, but depending on how you do it, you might just trade the labor because you have to feed that calf now," he says. "The labor might not be that big of a difference."

South Dakota State University (SDSU) research indicates a significant reduction in forage use by lowering the cows' requirements and taking away the pressure of calves grazing that same pasture. Ken Olson, SDSU West River Extension beef specialist, says three years of data show that moving from mid-November to mid-August weaning saved 19 lb. of forage per cow, per "cow day." That's the daily fraction of animal unit month (AUM).

"If we're putting a cash value on that, you can look to equivalent pasture rental rates in your area," he says. In South Dakota, \$20 per AUM is a common rate, and that's approximately 760 lb. of forage.

"We've saved about three-quarters of an AUM — \$15 worth of forage — for every cow that had her calf weaned early. And that's just a one-month value," Olson says. "For every month you wean earlier you can multiply that out."

In Rush's example, that would equate to \$30.

"You could either rent less pasture, or you could run more cows or you could leave them there longer," Olson says.

Those options become more important as the price of land escalates.

"Pasture rental rates have not gone up as fast as the cost of buying the land, but they've definitely gone up," he says.

In an overgrazed situation, like drought, early weaning has the added benefit of improving pasture health.

"Any time you give the vegetation a chance to recover, it's going to be more productive the next year," Olson says.

Some suggest cattlemen feeding harvested feeds through the winter may see more profit potential from that added flesh, but he says it is as important for yearlong grazers.

“The guys in a grazing situation may be lower-cost producers because they’re not feeding a lot of harvested hay, but they’re still feeding a supplement,” Olson says. “The better condition they can take those cows into the winter, the less supplement they’ll have to feed. Even if those cows are deficient in protein, if they’ve got excess body condition to live off, then those guys can save on supplement.”

The further an operation is from farming country, the more expensive that protein is, he says, citing recent \$300-per-ton examples.

“Sparing the cost of having to buy that supplement would be tremendously valuable,” Olson says.

Those heavier cows winter better, too.

“If I can take a cow into the winter with a body condition score (BCS) of six, I can rest a lot easier,” Rush says. “Her maintenance requirement is lower than it would be if you exposed muscle to the elements.”

It’s hard to measure the economic effect of factors such as longevity and reproductive rates, but some research shows both could be improved. A University of West Virginia study points to a one-quarter reduction in the proportion of cows culled, from 44.8% to 33.5% when early weaning was employed. Scientists there suggest females benefit from early weaning during their first and second calving seasons.

Very early weaning may help the postpartum interval and increase reproduction in the cows, but it’s hard to get exact numbers, Rush says. A producer might also have the ability to market cull cows in a different season, allowing them to capture a better market price.

### Individual benefits

So early weaning is clearly not too good to be true. It just takes some added figuring to make the benefits clear for each farm or ranch.

“I’m going to save on feed from the cow and I have to use that to feed the calf, but when I do, I’m getting a heavier calf and I’ve got a cow that’s going to get fat,” Heldt says. “I can spend the same dollars and get more pounds to sell and a cow I don’t have to feed. Plus, I can utilize that extra grass.”

“That can probably make a ranch a little bit of money,” he says.

Rush figures the profit at \$102.95 per calf weaned late last summer, compared to \$63.02 for normal-weaned animals.

“That assumes they retain ownership or the market functions perfectly,” Rush

says. He notes that many of the numbers are variable, and as things like ration costs change, the equation should be revisited.

“To answer the economic question for

each operation, the inputs and outputs — and their values — must be evaluated individually,” he says.



**Table 1: Comparison of early- and normally-weaned calves**

Feedlot performance	Early wean	Normal wean
Wean date	8/1/08	10/15/08
Calf wt. at weaning, lb.	400	550
Calf value <sup>a</sup> , \$ per lb.	1.30	1.12
Calf value, per head	520.00	616.00
Wt., lb., when sold	1,129	1,207
Date of sale	4/1/09	5/15/09
Days from weaning to sale	243	212
Daily gain, lb., from weaning to sale	3.00	3.10
Total gain, lb., from weaning to sale	729	657
Lb. feed per lb. gain <sup>b</sup>	5.2	5.7
Ration cost (\$/ton DM)	141.00	141.00
Feed cost per head, \$	267.25	264.10
Feed cost cwt., \$	36.66	40.19
Yardage, \$/day	0.32	0.32
Death loss, %	1.50%	1.50%
Nonfeed costs (Vac, drugs, implants, etc.)	18.00	18.00
Total cost, \$ per head	370.81	359.18
Total cost of gain, \$ per cwt.	50.87	54.65
Sale price, \$ live	0.86	0.86
Sell price, \$ per head	970.94	1,038.19
Profit	80.13	63.02
Difference between early and late gain		-17.11
Breakeven	0.789	0.808
<b>Potential added value from increased grade</b>		
Increase in % Choice	5%	
Choice-Select spread	\$8.00	
Advantage for early weaned per head	2.85	
<b>Potential added for seasonality of price</b>		
Increase for early wean early spring sale, \$ per cwt.	2.50	
Added value per head	28.23	
<b>Cow benefits from early weaning</b>		
Added cow gain on early-weaned calves, lb.	75 <sup>c</sup>	
Value of 75 lb. gain of cow, \$	30.00 <sup>d,f</sup>	
Costs of adding 75 lb. of cow wt., \$		0 <sup>e,f</sup>
<b>Forage savings, \$</b>	<b>30.00</b>	
<b>Added cost of feeding calf from weaning to late wean<sup>g</sup>, \$</b>		
Per day	0.91	
From early to late wean	68.25	
Profit from calf + market advantage and costs for cow, \$	102.95	63.02
Cost for finish calf and added early weaning cost, \$	409.06	359.18
<b>Cost savings for cow from early weaning calf, \$</b>		
Per day	0.19	
From early to late wean	8.36	

<sup>a</sup>\$12.00 slide.  
<sup>b</sup>9.6% difference in efficiency.  
<sup>c</sup>One body condition score (BCS).  
<sup>d</sup>Feed savings by allowing cow to lose one condition score, moving from a BCS 6 to a BCS 5, for example.  
<sup>e</sup>Added feed cost to gain one condition score, moving from a BCS 4 to a BCS 5, for example, based on National Research Council (NRC) calculations.  
<sup>f</sup>Assumes forage costs at \$90 per ton and supplement costs at \$250 per ton.  
<sup>g</sup>Assumes difference from maintaining on pasture at \$8.57 per month (29¢ per day) vs. drylot at \$1.20 per day (Ration cost, \$200 per ton at 10 lb. per day + 20¢ yardage.).