

Managing Your Cowherd for Retained Ownership

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Thank you for inviting me here to discuss cattle feeding and the opportunities we all have as beef producers to work together to produce consistently great eating experiences for our beef consumers. Our industry has changed over the past several years as our focus has changed from cattle production only, to now include an emphasis on the end-product. The adversarial relationship between ranchers, feeders, and processors has been replaced with coordination, cooperation, and transparency. We must end the island mentality, and start win-win alliances between all industry segments. Trust usually grows when it is given a chance.

The challenge we face is to implement management practices, grazing and feeding programs, animal health protocols, and risk management systems that allow us to deliver nutritious high-quality beef to our customers. We also must be able to generate a profit for our business and yet deliver an affordable product to the consumer. Beef prices are record high. We must make sure the beef consumer is getting the value and benefits of taste and tenderness they expect. We never want consumers to lower their expectations of beef, and there is no way to spin a disappointment on the plate (Table 1). That's why we have to build up our own expectations for excellence at every step along the way that leads to that moment of truth. It's time we expect more from our calves and set the wheels in motion so that we have reasons to expect more.

Table 1. Eating satisfaction related to USDA quality grades¹

Quality Grade	Undesirable Eating Experience	% Undesirable
Prime	1 in 26	4
Premium Choice (CAB)	1 in 19	5
Choice	1 in 7	14
Select	1 in 5	20

¹Adapted from Certified Angus Beef

My company is in the cattle feeding part of the industry. I want to discuss with you a "Recipe" for preparing calves to go on feed. We employ both a consulting veterinarian, and consulting nutritionist to help develop animal health and nutrition protocols for all cattle that are on feed in our feed yards. They are also available to consult with our cattle feeding customers. Much of the information I will share is based on their input and experience from consulting with feed yards in the U.S., Canada, and South Africa.

The starting point is the health and nutritional well-being of the cow. Fetal programming of the cow has been around for some time. However, the focus and influence of fetal programming on the offspring is paramount to the calf's ability to perform well when it arrives at the feed yard. Cow nutrition in the months before calving can determine their progeny's future production. Supplementation during this phase could make a defining difference: there's a positive effect on heifer fertility, weaning weights, and quality grade.

University of Nebraska research found offspring of supplemented cows graded 86% Choice, compared to 71% in the non-supplemented group. However, the premium-Choice percentage dropped 18 points without the added protein, 39% vs. 21%. Yield grade was virtually the same. "The increase in percent Choice, without an increase in yield grade, translated to \$47 advantage in carcass value," says Nebraska animal scientist Rick Funston. Supplemented cows weaned 5% to 9% more calves than cows without

supplement. Steers born to supplemented mothers had a 48-lb. advantage in weaning weight; carcasses were 42 lb. heavier at harvest. Heifers born to supplemented cows had higher overall pregnancy rates (93% v. 80%) and a higher percentage of calves delivered early in the calving season. The cows in this trial received 28% crude protein supplement during the last trimester of pregnancy. Most of the unborn calf's growth (75%) occurs during the last two months of pregnancy.

Another necessary requirement for the cow nutrition is to have a balanced mineral supplementation program. The soils in this part of the country are deficient in most of the micro-nutrients the cow needs to produce a healthy-strong calf. Finding the right mix of organic and inorganic minerals to meet the cow's nutritional needs are vitally important to the health of the calf. Copper and selenium are the nutrients most often found deficient in calves. Levels of magnesium for a cow on green forage, and phosphorus if she is on winter pasture must be carefully monitored. Sulfur levels in the water can also present challenges if not managed properly. The trace mineral level in the unborn calf is determined in the last trimester of pregnancy. Good trace mineral supplementation will also improve the quality of colostrum for the new-born calf which also prepares the immune system to ward off health challenges.

The vaccination program administered to cows and replacement heifers also plays a large role in the health of their calves. Science has shown that a modified-live approach to BVD and IBR control on the ranch is more effective and at less cost to the rancher. This approach also enables use of modified-live vaccines in the calves on the ranch at branding and pre-weaning which gives better protection at the feed yard. Effective vaccination of the beef cowherd for prevention of calf respiratory disease includes: 3 doses of modified-live IBR, BVD1 and 2, BRSV, and PI3 prior to breeding the first time and yearly boosters of modified-live vaccine to the cowherd yearly prior to breeding.

I have spent a good amount of time discussing the nutritional and health protocols for cows in the breeding herds, because they play such an important role in determining the healthfulness of the calves they produce. Bovine Respiratory Disease (BRD) is the most costly disease in the beef industry. It is estimated that it costs the industry up to \$750 million a year. Prevention of this costly disease has to be a focus of any program.

Our suggested health protocol for new calves at pre-weaning (3 – 5 weeks pre-weaning) or branding Option is 7-way Blackleg, BVD, PI3, IBR, BRSV, and Pasterella. For cow herds that have been on a yearly modified-live vaccine program, vaccine options include: Express-5-PHM, Bovishield Gold, or Pyramid-5-Prepsone. For non-vaccinated cow herds, suggested options are: Cattlemaster-4 and Prepsone. The weaning booster we suggest is a modified-live BVD, IBR, PI3, BRSV, and BVD2. Vaccine options include: Express-5, Bovishield Gold, or Pyramid-5. A good de-worming program should also be a part of the pre-weaning/weaning process.

Another part of the recipe to consider is creep feeding. Studies at the University of Illinois have shown that getting nursing calves to consume a high-energy creep diet will enhance marbling deposition. In one trial, 27% more calves graded Mid-Choice or higher as a result of consuming a corn-based creep feed. These calves also had significantly greater carcass weights. The challenge with creep feeding is to get the calves to grow frame and muscle without getting them too fleshy.

I will not spend much time discussing genetics, because there are good cattle in every breed. The challenge is to identify bloodlines that work best in whatever breed you are using. The following table (Table 2) is interesting because it reveals the impact of the birth sequence of a calf crop and the quality grade results for each birth period.

Table 2. Quality grade by birth sequence within the spring calving season¹

USDA Quality Grade	Birth Sequence ²				Chi-Square P Value
	E	ME	LE	L	
Prime	0.53 %	0.78 %	0.00 %	0.00 %	0.39
CAB	28.60 %	24.37 %	16.28 %	11.24 %	<0.0001
All Choice	85.05 %	83.63 %	76.88 %	77.89 %	0.009
Select	13.88 %	14.81 %	23.12 %	21.05 %	0.004
Standard	0.53 %	0.78 %	0.00 %	1.05 %	0.97

¹Adapted from Iowa Tri-county Steer Carcass Futurity²E=early, first 21 days; ME=mid-early, 22-42 days; LE=late-early; 43-63 days; L=late, after 63 days

I mentioned earlier that BRD costs the industry up to \$750 million per year. Research trials and real-time feeding results show over and over that healthy cattle have better feed yard and packing plant performance and are obviously more profitable (Table 3). Research from the Iowa Tri-County Steer Carcass Futurity (TCSCF) shows those factors lead to a \$190 net difference between cattle treated twice and those that never needed treatment (Table 4). The cattle that remained healthy during the feeding phase had Heavier delivery weights, heavier final weights, strong gains, fewer days on feed, and higher carcass marbling scores. The heavier delivery weights indicate that the cattle most likely to stay healthy in the feed yard are those that spent more time in the back grounding stage, had a solid pre-condition program on the ranch, and/or have more in-depth health protocols before arriving in the feed yard.

Table 3. Effect of post-weaning disease on carcass, traits, feedlot performance and mortality¹

Item	Number of treatments		
	None	One	Two
Prime, %	1.6	0.9	0.9
Premium Choice,%	21.7	19.1	14.6
Low Choice, %	51.0	44.7	42.1
Select, %	23.6	30.4	33.2
Standard, %	2.2	4.9	9.3
YG 1&2, %	57.0	67.7	73.1
YG 4&5, %	2.3	1.2	0.3
ADG, lbs./day	3.2	3.0	2.9
Mortality Rate, %	0.1	3.1	10.0

¹Adapted from Black Ink Basics Poor Calf Health is a Disease to Profitability**Table 4.** Effect of number of health treatments on feedlot performance, carcass traits and profitability

Item	Number of Treatments		
	None	One	Two
Arrival wt., lb.	650	617	601
Delivery age, days	302.8	274.1	263.9
Final adj. wt., lb.	1,183	1,155	1,133
ADG, lb./day	3.22	3.06	2.93
Days on feed	167.0	177.9	183.7
HCW, lb.	727.3	709.9	698.9
Rib fat, in.	0.45	0.43	0.39
Marbling score	429.4	413.8	395.9
% CAB	18.71	14.36	11.19
Treatment cost, \$/hd	0.00	24.04	61.41
Cost of gain, \$/cwt	61.82	69.09	73.18
Profit, \$/hd	52.45	-15.16	-137.30

Setting calves up for good feed yard health is particularly important if you intend to retain ownership. If not, keeping good records of a solid health program and proven health performance will certainly give you the leverage you need to demand more for those cattle at auction. Having the best available health program does not always guarantee healthy calves. Outside stressors such as the distance they are transported after leaving the ranch, weather, age and weight of the calves, and co-mingling stress can have negative effects on ranch-fresh calves.

The Texas A&M Ranch to Rail Program was initiated in 1992 to determine if calf owners genetics and management systems were competitive in the beef marketing system. The program was developed by John McNeill at Texas A&M University, College Station, Texas. He said it has always been the mindset of ranchers to produce a calf crop as cheap as possible, pass it off to the next phase of production, and then focus on doing the same thing to the next year's production. Asking them to do something that adds value down the production chain that does not add value or saleable pounds at the ranch of origin generally fell on deaf ears. However, in recent years market signals are being sent to not only heighten their awareness of things they can do at the ranch to create value, but in many cases make it a financial incentive to do so.

The information gathered from this program on nearly 20,000 steers from over 1,700 ranches from ten states led to the development of the industry's Value Added Calf Vaccination Management Guidelines. Each animal was sold on an individual carcass merit basis when it was market ready which resulted in grid premiums or discounts to recognize differences in carcass values.

Over the ten year period the average net return was \$74.54 above what the calves were worth at weaning (Table 5). Each year the range in returns from the high profit ranch to the low return ranch was \$300 to \$500 per head. Each year a large percentage of these differences were due to expenses related to death loss and health related factors.

Table 5. Influence of sickness on performance, profitability, and quality grade in eight years of the Texas A & M Ranch to Rail Program

Item	Healthy	Sick
Number of cattle	12,306	4,047
Medicine treatment costs, \$/hd	0	27.03
ADG, lb/day	2.99	2.67
Net Return, \$/hd	67.32	-20.28
USDA Choice or higher, %	39.6	27.5
USDA Standard, %	10.0	5.25

Lance Zimmerman, currently an analyst with Cattle Fax, did an analysis of Superior Video auction results to determine what creates differences in value for calves. He found the largest premiums were paid for health and breed related management. Other factors such as weight, uniformity, head count, sex, and region of origin also influence prices. His research was done at Kansas State for his Master's Thesis under the supervision of Dr. Ted Schroeder. The research was later published in The Journal of Agriculture and Resource Economics.

I will summarize the results Lance found to help explain the differences in prices paid for calves sold through the Superior Auction System. The marketplace has changed dramatically over the last 25 years. Vertical coordination, not to be confused with vertical integration, has become nearly a standard in operating in the business today. Consumers have more expectations for beef they purchase; the burden of meeting those expectations is communicated all the way back through the supply chain, ultimately to the cow-calf producer (Figure 1). It is important to listen to your buyers to see if your calves are meeting

those expectations. If your buyers aren't telling you, look at what they are and are not paying for when it comes to what you are producing.

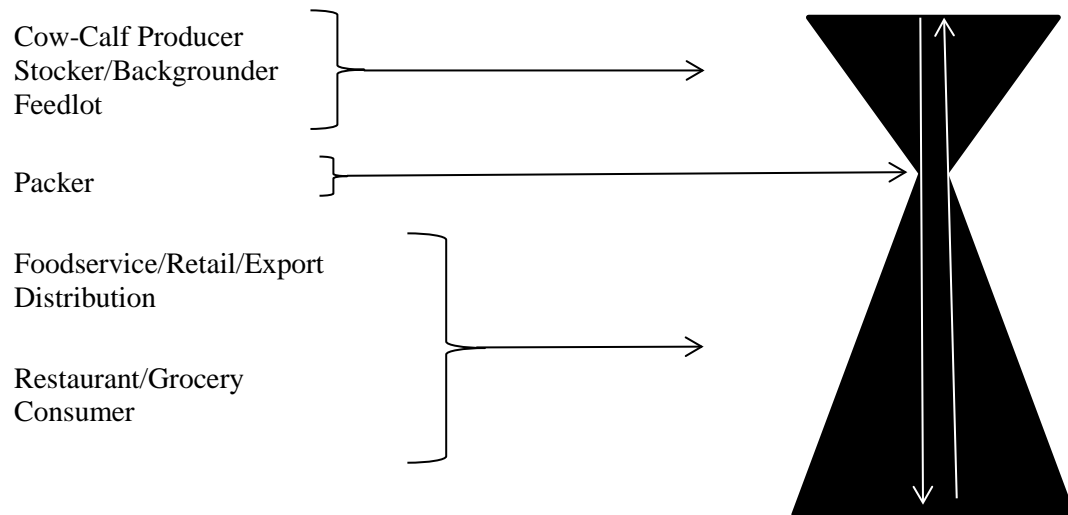


Figure 1. The Hour – Glass Shape of the Beef Production

Superior Livestock Auction was chosen for this research because it covers the entire nation and can define the national price incentives and discounts for calf management in the marketplace. The research also looks at the role of auctions as a calf-pricing and marketing tool and helps quantify the price effect of vertical coordination at the cow-calf sector.

The research helps identify the benefits of value-added calves. Obviously there are challenges associated with implementing a value-added program. They might include finding the time, having proper facilities, labor required, costs, and the perceived profit for the extra work and costs.

Summary of Sale Lots

- 20,148 steer lots = 2.5 million head
 - 123 head per lot w/ 578 lb. average base weight
- 13,062 heifer lots = 1.5 million head
 - 116 head per lot w/ 536 average base weight
- Generally, sold in July for October delivery
- 30 % weaned
- 77 % certified vaccination program
- 33 % predominantly Angus or black-hided

Table 6 shows the various vaccination programs evaluated and the resulting premiums from each program. These protocols were mentioned earlier when they were developed by the Texas Ranch to Rail program. The Vac-24 and Vac-34 are non-weaned programs with the Vac-24 calves receiving one virus vaccination, while the Vac-34 calves have received two virus vaccinations. The Vac-45 program is for home-raised calves that have been weaned for 45 days and have had two virus vaccinations. The VAC Precon program is for mixed origin, put-together calves that have been weaned 60 days and have had two virus vaccinations.

Table 6. Program and premiums reported from Superior Livestock Auction analysis

Trait	Low	High	Years Premium Existed
Certified Health Programs			
VAC 24	\$1.09	\$3.46	8 of 10 years
VAC 34	\$1.90	\$4.30	10 of 10 years
VAC 34+	\$3.52	\$4.27	3 of 3 years (started in 2008)
VAC 45	\$1.75	\$4.21	9 of 10 years
VAC Precon	\$1.93	\$5.42	6 of 10 years
Non Certified health claims			
One	\$1.07	\$2.55	8 of 10 years
Multi	\$1.26	\$3.29	7 of 10 years
Weaning and Origin Claims			
Home	\$2.10	\$5.14	10 of 10 years
Mixed	\$1.55	\$8.13	9 of 10 years

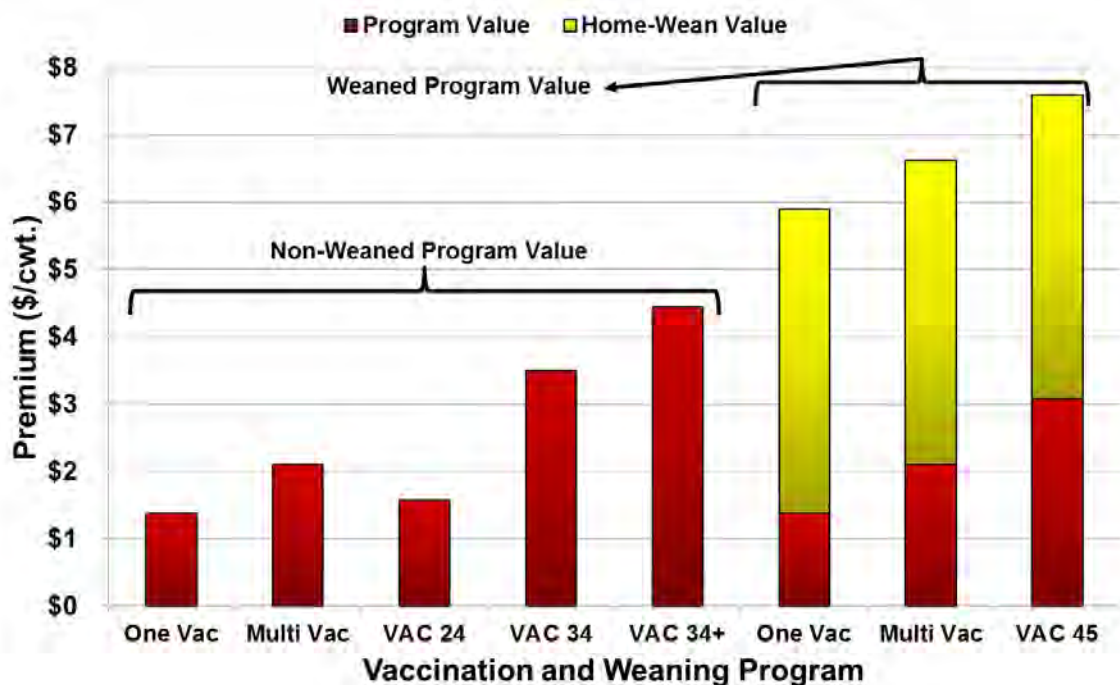


Figure 2. Health Program Premiums for 2008-2010 SLA Home-raised Steers

Table 6 and Figure 2 also show the additional premiums received for calves that are weaned.

Table 7. Genetics and breeding program

Trait	Low	High	Years Premium Existed
Predominantly English	\$1.64	\$4.45	10 of 10 years
Predominantly Continental	\$1.71	\$4.20	10 of 10 years
English-Continental Cross	\$1.71	\$4.70	10 of 10 years
Black or Black-White Face	\$3.77	\$6.71	10 of 10 years
Predominantly Angus	\$3.54	\$7.00	10 of 10 years

Table 7 shows the premiums for each breed type compared to those paid for Brahman-influenced steer calves.

All of the above information record premiums and discounts in dollars per hundred weights. If these prices were recalculated into percentages they would be equally accurate. Because prices are considerably higher today than during the 2001 to 2010 period covered by the research, the benefit of value-added programs will likely return more money today when compared to the earlier period.

In summary, the largest premiums were generated by health and breed related management programs. The data also suggests uniform load lots of similar calves are the ticket to get in the game. If you don't have a full load, maybe you can coordinate with a neighbor to build a load. Buyers also respond positively to documented, detailed seller claims.

I want to finish by telling you a little about Pratt Feeders. The company owns three feed yards located in Pratt and Ashland, Kansas and Buffalo, Oklahoma. We market over 150,000 head per year, with 90% sold on an individual carcass merit basis. Our goal is to maximize the value of every individual animal.

We are founding members of US Premium Beef (USPB), which is a part owner of National Beef Processing Company. Recent USPB data for delivery since August, 2013 showed the top 25% of the cattle processed on their grid returned \$85.82 per head above the cash market, and the top 50% returned \$70.09. The majority of our fed cattle go to National; however Cargill and Tyson also purchase cattle from us. We work very closely with our customers to assist them in getting individual carcass data on their cattle along with all of the feed yard performance data we routinely provide.

Other services available to our customers include: feed financing (100% of feed can be financed, 95% of our customers utilize this service), cattle financing (we require 25% down and offer competitive interest rates), risk management assistance for both cattle and grain, and forward contracting opportunities for cattle and grain. The cattle financing option has been popular with our customers because it allows them to have a cash flow to use in their operation while they have cattle on feed.

Another popular option utilized by some of our customers is to joint venture or partner with the feed yard, in which each owns a portion of the cattle. This allows the ranch to receive cash for the portion that is sold to the feed yard and retain ownership on the balance. This option allows the ranch to find out how their cattle perform after they leave the ranch. The data that comes back can then be used to adjust management and genetic decisions that will make your cattle worth more to both the ranch and the feed yard or buyer of the calves. Over the past twenty years, retained ownership has been profitable 85% of the time in The Iowa Tri-County Steer Carcass Futurity.

In summary, beef industry cooperation, coordination, and transparency are increasing. What you do at the ranch has a big impact on how your calves perform after they leave the ranch. Many of you do not know much about your cattle after they leave the ranch. Is the market letting you sell quality calves for commodity prices? I would challenge you to find out by retaining ownership on a portion, or at least finding a way to get feed yard performance and packing plant carcass data.