
Value Added Livestock Marketing: Adding Value for Cow-Calf Operators

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Sources of Revenue for Cow-Calf Operations

■ Salvage Value of Assets

□ Cull Cows

- 15-30% of a cow-calf herd's annual revenue
- Does body condition score matter?
- Is retaining through winter more profitable than selling in October at the time of culling? What kind of feeding system?
- Is selling culls as bred cows a profitable alternative?

■ Commercial Product

□ Calves

- Management Practices = Value Impact



Two approaches to increase value

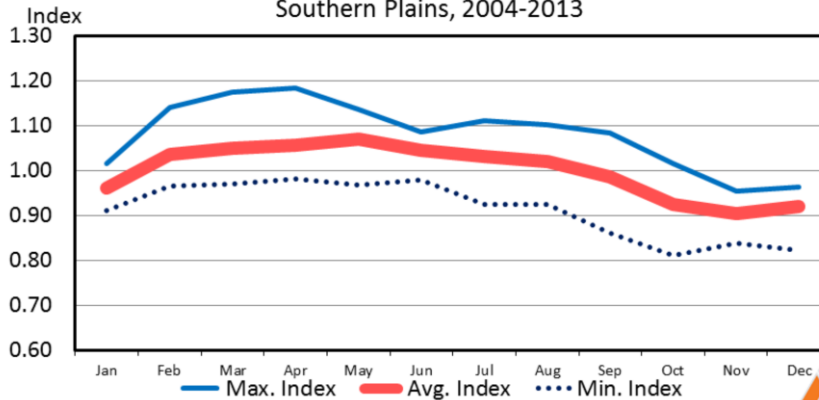
Consider your cows as productive assets. At the end of their useful life in your operation, how can you maximize their salvage value? Revenue from culls is a significant component of annual revenue. Is it worth retaining cull cows in a feeding system for delayed marketing after culling them from your herd? The economist answer – it depends! We will look at some alternatives.

The other source of revenue for a cow calf operation is the commercial product – your calves. We will examine management practices that can impact the final value of your calves at marketing.

Increase value of product

Cull Cows: Opportunity lies in the Seasonality...

SEASONAL PRICE INDEX – UTILITY COWS
Southern Plains, 2004-2013



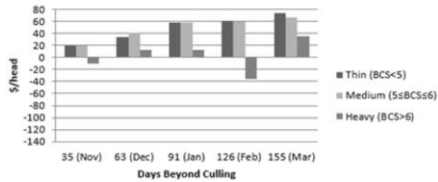
Data Source: USDA-AMS, Compiled & Analysis by LMIC
Livestock Marketing Information Center



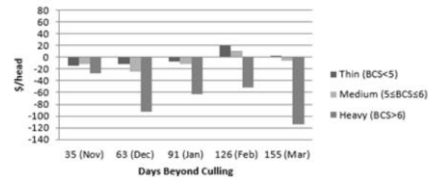
Opportunities exist to increase revenue from cull cows through changes in marketing strategies. This figure shows that cull cow prices tend to bottom out in the fall when the majority of calves are weaned and culling decisions are made, then increase into early spring. By shifting the cull cow sale date from November to March-April, producers may realize about a 10% increase in sale price.

Feeding System and Body Condition Matter

Net Returns for Delayed Marketing of Cull Cows, Pasture System, Estimated Prices (2003-2010)



Net Returns for Delayed Marketing of Cull Cows, Dry Lot System, Estimated Prices (2003-2010)



Native Pasture System

- Stockpiled native grass pasture (350 acres)
- Hay and cubes only during icy periods

Drylot System

- Start feeding rye hay with 10% crude protein in mid-October
- Start feeding 25% crude protein cubes at ~ 5 lbs/day/head in December



These charts show the difference in returns for cows with differing initial BCS. Top left is for the pasture system, bottom right for dry lot system. The right bar indicates the return for the cows labeled heavy at the start of the study.

Clearly, not much opportunity for increases in net returns for cows in good body condition when calves are weaned regardless of system or length of holding period. Cull cows placed on winter pasture and marketed in late winter or early spring months can return up to \$60 per head more than an October sale (Amadou, Raper, Biermacher, Cook, & Ward, 2014). Highest returns were reported for cows that were thin to medium body condition score (BCS) in early fall (thin = BCS <5; medium = BCS 5-6) placed on native grass for 90-150 days. Retaining cull cows with BCS > 6 was typically not profitable

Preferred System and Feeding Length

- Year to year decision – not automatic
 - Re-evaluate your resources and market conditions
- Get rid of your big ones...
 - Heavy, higher BCS cows not profitable for retention
- Find an inexpensive way to feed the rest
 - Little difference in returns between thin & medium
 - Native Grass more profitable than low-cost drylot
 - 90-150 days on native grass = highest returns
- Potential to breed back at least some of them
 - Market as bred -Potential replacements for fall calving herds or year-round herds
 - Bull has to eat regardless of where you keep him...



Remember that market conditions change. That means that retaining cull cows is a year to year decision based on (1) your own resources such as stockpiled forage, (2) projected feed costs if necessary, and (3) the current and expected market for slaughter cows.

Cows with higher body condition scores require too much feed resources to maintain weight. Our recommendation is to sell those animals at culling.

For those in low to moderate body condition, assess your resources. Feeding 90-150 days with a relatively inexpensive feed source can be profitable.

Consider attempting to breed back some of them if you have resources to keep them separate from the rest of the herd. They can then be sold as bred or pairs - to fall calving herds or year-round calving herds, for example.

Strategies for Adding Value to Calves

■ Calf Management Practices

- ❑ Moving calves off the ranch is stressful for them!
- ❑ Buyers recognize the value of steps taken to decrease the impact
- ❑ Preconditioning
 - **Castration** - healed prior to marketing
 - Dehorning
 - Weaned >30 days
 - Bunk broke
 - Vaccination protocol

■ Adding Pounds

❑ **Implants**

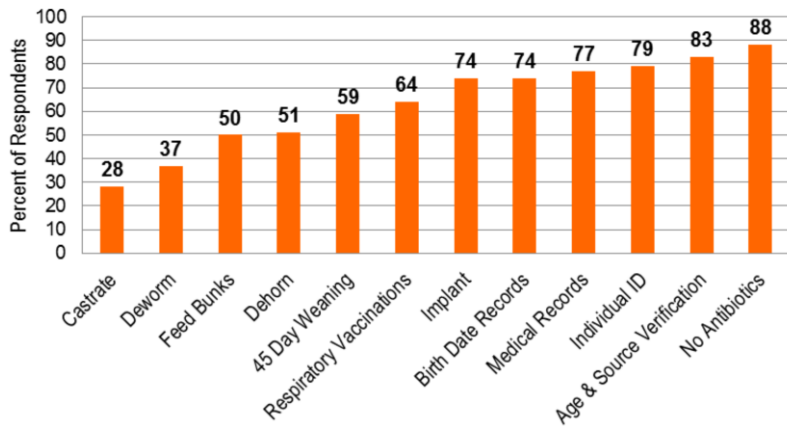
■ Herd Management Practices

- ❑ **Defined Breeding Season**
 - How does this add value to calves?



Moving calves places stress on them, which impacts their immune systems and eating habits. Anything you can do to reduce that stress at marketing has value. We will focus on 3 specific strategies: Castration, Implants, and a Defined Breeding Season.

Non-Adoption Rate By Practice



2009-2010



In these results from the 2010 OBMM survey, 28% of Oklahoma producers who responded do not castrate bull calves prior to marketing.

A lot of bull(s)...

- Too many lots containing bulls

- 7.2% in 2014 – down from 10.1% in 2013
 - Selected value added sales in Oklahoma
 - State average is likely higher
 - Bull discount applies to entire lot!

- Who castrates?

- 95% of herds > 200 head 50% of herds < 50 head

- Who doesn't?

- OK: 28% producers do not castrate before marketing (OBMM Survey 2010)
- S. Central US: 56% of operations do not castrate prior to weaning (lowest region) (NAHMS)



Show Me the Money: Castrate Bull Calves Prior to Marketing

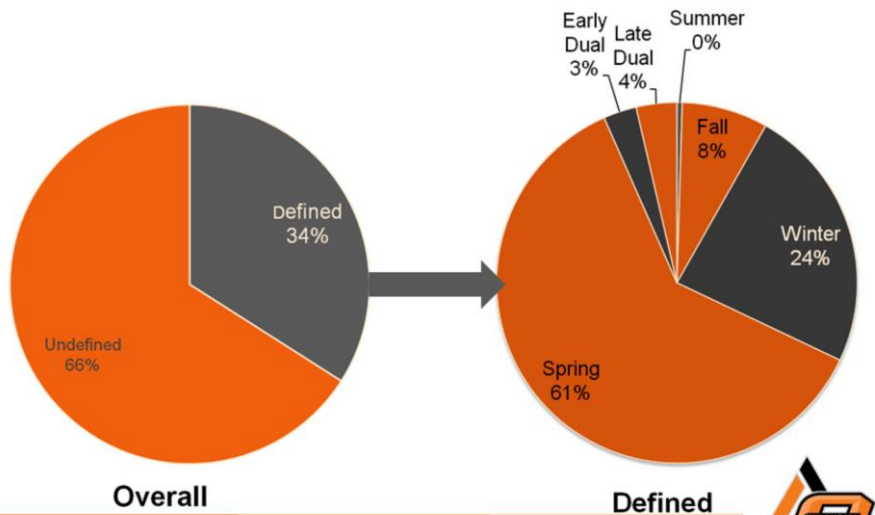
- Lower stress, less sickness, lower death loss
- Late Castration
 - Beef quality issues with late castration
 - Looming animal welfare issue
- Economics
 - Don't castrate: Discounted \$5-10/cwt = \$25-\$50/head
 - Castrate after 3 months of age,
 - 20# of gain less
 - 12 additional days in the feedlot



Why does it matter? From a health perspective, calves that are castrated at less than three months old experience lower stress levels, less sickness, and lower rates of death loss. From an animal welfare perspective, older calves experience more stress at castration and show more aggressive behavior while uncastrated, implying greater risks of injury for other animals and for humans. From a beef quality perspective, calves that weigh more than 500 pounds at castration will have less marbling and lower tenderness ratings.

From an economic perspective, bull calves castrated past 3 months of age will weigh 20 pounds less, on average, at slaughter and will be in the feedlot for 12 additional days relative to a calf castrated at less than 3 months of age. That results in a higher cost of gain at the feedlot. And finally, from a cow-calf operator's perspective, bull calves are discounted at the sale barn, impacting the bottom line. Williams, et al. (2012) found that bull calves were discounted at \$5.77/cwt at feeder cattle auctions in Oklahoma in 2010. That is a revenue difference of \$25 between a 500 pound bull calf and a 500 pound steer calf, conservatively speaking. Many other studies find similar discounts, typically in the \$5/cwt to \$10/cwt range.

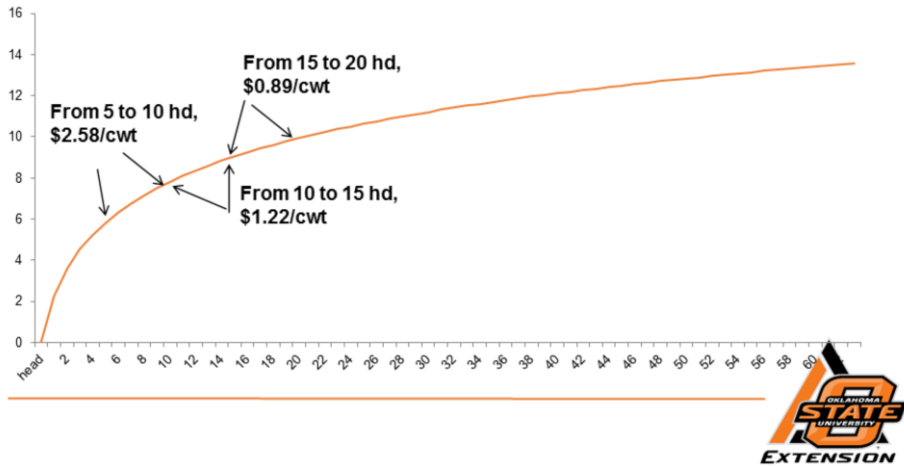
Defined Calving Seasons



In the 2010 OBMM survey, we also asked producers to describe their calving seasons. As you can see, only 34% of Oklahoma producers have what we would describe as a defined calving season where 80% of their calves were born within a 3 month period. The breakdown of defined calving seasons is shown on the right. The bulk of Oklahoma producers who DO have a defined calving season are calving in the spring, with a large component calving in winter/early spring. What does this have to do with adding value? Let's take a look.

Effect of Lot Size on Sale Price: 2010-2013 Sale Data

lot size effect
\$/cwt



Implant Economics

■ Calfhood implants

□ Effective

- 18 lb. of gain

□ Inexpensive

- \$1-2 cost per calf

□ Valuable

- Value of implant depends on value of gain
- VOG=\$0.80 => \$14.40
- VOG=\$1.50 => \$27.00



Implant at branding

Implant at weaning

Administer herd health program at weaning

Vaccinations

Deworm

45 to 60-d growing period

Certification through value-added preconditioning program

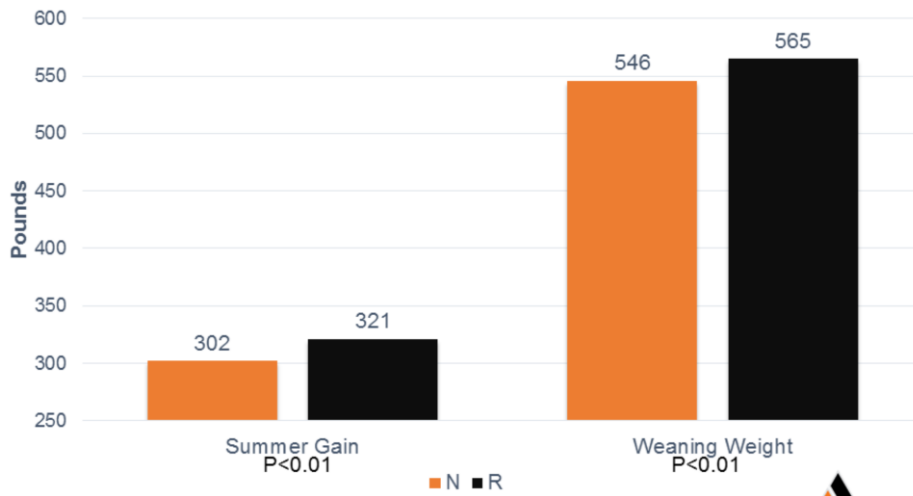
Oklahoma Quality Beef Network

Angus Source

Superior Wean Vac

Fear of market discount for implanted calves is unjustified

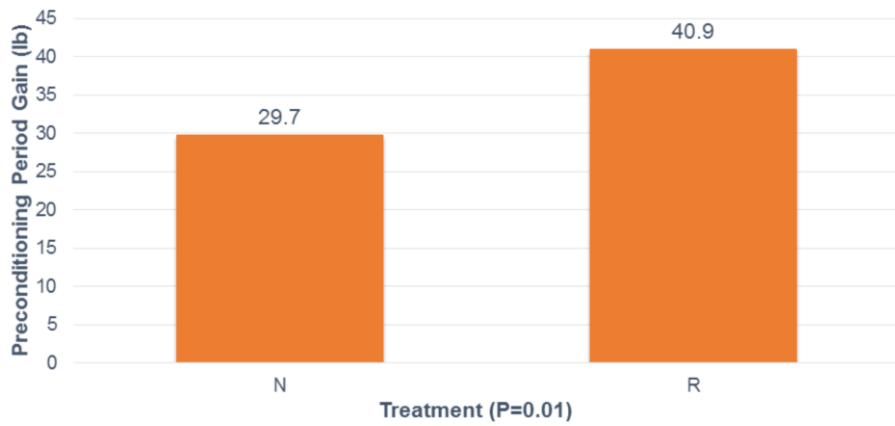
2014 Implant Study, OSU



Source: McMurphy, Sharman, Cox, Horn, Lalman (2010).



Preconditioning Gain after Implant at Weaning



Source: McMurphy, Sharman, Cox, Horn, Lalman (2010).



Hide color discounts (relative to black)

Hide Color (Black Base)	\$/cwt
Red	-4.01
Hereford	-7.86
White/Grey	-1.84
Dairy/Longhorn	-25.05
Other	-9.99
Black mixed	-1.65
Red mixed	-3.05
Mixed	-3.84



Why precondition?

Practice or Trait	\$ per cwt
Vaccinated	1.60
Weaned	1.67
Certified VAC-45	0.89-2.56
Non-Uniform	-7.95
Horns	-2.80
Unhealthy	-27.06
Days to March	-0.07



Preconditioning pays at the sale barn. Vaccinated and weaned calves earn, on average, \$3.27 per cwt more than other calves. Certification through a 3rd party adds between \$0.89 and \$2.56 per cwt. Dehorned and polled cattle earn \$2.80 more than horned lots—even lots with as few as 20% of the calves horned. Unhealthy calves, such as cloudy eyes, lame, runny nose, bad tail,..., can be very costly at the sale barn. These calves are discounted on average \$27 per cwt but extreme cases are even worse. Non-uniform lots of calves are docked almost \$8 per cwt. A defined calving season helps reduce non-uniformity. Note, this discount is greater than volume premiums shown previously. Finally, preconditioning pushes sale dates back. Calves sold later in the marketing season tend to sell better than October calves. Every day later in the season adds \$0.07 per cwt on to the sale price. A 45-day preconditioning period increases the sale price, on average, \$3.15 per cwt.

Other important sale determinants

Trait	\$ per cwt
Heifers	-9.69
Bull/Mixed	-4.94
Mixed, #2 & #3	-2.48
Light, all #3	-14.13



Even one or two bull calves in a lot of steers will cost the seller around \$5 per cwt for the entire lot. Castration is a proven tool to adding value to your calf crop. Lighter muscled calves are discounted. Mixed lots of #2 and #3 calves sell for about \$2.50 per cwt less and #3 calves are back over \$14. Selected bulls with adequate muscling pays at the sale barn.

Why do prices at sale barns differ?

Wheatacres100K	0.64
Distance	-0.07



One question that we often get is why do some sale barns seem to have lower sale prices than others. If we compare western Oklahoma to eastern Oklahoma, one driving factor is the availability of wheat pasture. For every 100,000 acres of wheat within a 100-mile radius, sale price increases by \$0.64 per cwt. This is due to local demand for wheat stockers. Also, distance from a 4-lane highway affects a sale barn's average selling price. For every mile away from a 4-lane highway, sale price decreases by \$0.07 per cwt.

A common concern

- We sometimes hear from producers that only large producers receive premiums for value-added practices.
- So, we tested this statement using data from our 2010 OQBN sales and other 2010 calf sales in Oklahoma
- Partial budgets developed for various practices and combinations of practices



Costs and Benefits of Practices

	Wean	Wean, Vac, Dehorn	Wean, Vac, Dehorn, Certify
Baseline Returns to Cow-Calf Expenses			
Weaning Weight (lbs)	487	487	439
Price (\$/cwt)	\$116.89	\$116.89	\$120.60
Revenue (\$/head)	\$569.27	\$569.27	\$529.42
Revenue with Value-Added Practice(s)			
Sale Weight (lbs)	529	529	529
Baseline Sale Price (\$/cwt)	\$113.98	\$113.98	\$113.98
Added Premium (\$/cwt)	\$5.23	\$8.78	\$12.46
Sale Price (\$/cwt)	\$119.21	\$122.76	\$126.44
Revenue (\$/head)	\$630.64	\$649.42	\$668.88
Value-added Expenses			
Labor (\$/head)	\$2.31	\$2.56	\$5.00
Death Loss (\$/head)	\$1.80	\$1.80	\$1.80
Supplies and Medical (\$/head)		\$13.00	\$18.00
Interest (\$/head)	\$2.34	\$2.36	\$4.85
Feed (\$/head)	\$17.89	\$17.89	\$38.34
Certification Costs (\$/head)			\$3.00
Total Costs (\$/head)	\$24.34	\$37.62	\$70.99
Net Returns from Value-Added Practice(s) (\$/head)	\$37.02	\$42.53	\$68.47



In the first column, a partial budget for weaning is given. The calf is assumed to weigh 487# at weaning with revenue of \$569. Selling 45-days after weaning, the calf weighs 529# and sells for \$630. After expenses and death loss, the producers gains \$37 per head from weaning the calf for 45 days before selling. Combining weaning, vaccinating, and dehorn, the projected gain increases to \$42.53 per head even though expenses also increase. The difference is due to added revenue from increased sale price. When 3rd-party certification is added to the bundle, profit now increases to \$68.47 per head.

Probability of Positive Returns for Various Management Practices

Practice Adopted	Net Returns (\$/cwt)	Pr(Ret ≥ 0)
Weaned	\$5.13	0.588
Vaccinated	\$6.01	0.644
Dehorned	\$6.31	0.594
Weaned and Vaccinated	\$5.36	0.585
Weaned, Vaccinated, and Dehorned	\$10.98	0.674
Weaned, Vaccinated, Dehorned, and Certified	\$12.90	0.794



Using statistical methods, we were able to estimate the probabilities that various practices and combinations of practices would be profitable for Oklahoma cow-calf producers using the sale data from 2010. Net returns for weaning a calf for 45 days increased average profit by \$5.13 per cwt and was profitable for about 59% of producers. Vaccinating earned profits of \$6 per cwt and was profitable of 64% of the time. Dehorning earned average profits of \$6.31 per cwt and was profitable 59% of the time. When combining practices, the probability of profitability increases over single practice adoption with 3 and 4 practices bundled together. Two factors contribute the higher probability of profitability. First, each of these practices individually increases sale price. Second, the marginal cost of the 2nd, 3rd, and 4th practice tends to be fairly low because calves are already in the chute. So, the labor cost of collecting calves is spread over multiple practices. As a result, the combination of weaning, vaccinating, and dehorning calves earns nearly \$11 per cwt in profit with a 67% probability of positive profits. Adding in certification to this bundle of practices increases profit by \$13 per cwt with over 79% probability of positive profits.

Resources: Cull Cows

- Kellie Curry Raper and Jon T. Biermacher. "Cull Cow Management and Marketing Alternatives." Oklahoma Cooperative Extension Service Fact Sheet AGEC-629, December 2016.
<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-10583/AGEC-629web.pdf>
- Kellie Curry Raper, Jon T. Biermacher, and Zakou Amadou. "Marketing Cull Beef Cows: Does Body Condition Score Matter?" Oklahoma Cooperative Extension Service Fact Sheet AGEC 627, March 2014.
<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-9258/AGEC-627web.pdf>



Resources: Calves

- Oklahoma Quality Beef Network Preconditioning Protocol and Sale Information
 - <http://oqbn.okstate.edu>
- Preconditioning budgeting tool available at
 - www.agecon.okstate.edu/faculty/publications/3943.xlsx
- R. Reuter, G. Mourer, D. Lalman and C. Richards. *Implants and Their Use in Beef Cattle Production*. Oklahoma Cooperative Extension Service, ANSI-3290.
 - <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-10027/ANSI-3290web.pdf>
- D. Doye, E. DeVuyst, D. Lalman, and K. Raper. "Proven Strategies to Maximize Profits to Cow-Calf Producers". *Journal of the NACAA*. Vol. 9, Issue 1 – June 2016.
 - <http://www.nacaa.com/journal/index.php?jid=592>

