Factors that Affect Calf Selling Price at Marketing[1]

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Introduction

Nearly all cattle producers can add value to their annual calf crop, but not every producer takes advantage of this opportunity. Many ways to add value to a calf crop are simple applications of basic management practices. However, applying basic management practices does not guarantee a premium sale price for the calf crop. Rather, using management practices to produce a "value-added" calf may only result in the calf sale price starting at the base market value and avoiding any price discounts. Put differently, cattle buyers are not looking for reasons to pay cattle producers more money; they are looking for reasons to pay less for calves. There are differences between the real and perceived reasons that cattle buyers discount calves; cattle producers can control some reasons for price differentials, but they cannot control all of them. The challenge for cow-calf producers is to bring to market calves that are acceptable to subsequent segments of the beef cattle industry. At each transaction calves are evaluated primarily on visual assessments, but transfer of information can enhance the value of calves. The following publication will review some of the attributes that affect market calf price and overall value.

Sale Method, Location, and Timing

The Southeast region contains 52.6% of the beef cattle operations in the United States, but 82.6% of these beef cattle operations have fewer than 50 beef cows. When calves leave beef cattle operations, 90% of the calves are sold via sale barns (Troxel and Barham 2012). For herds with 0–50 or 50–99 cows, sale barn or auction markets were used 90% and 93% of the time to sell cattle (USDA 2009). This is compared to larger cattle operations (>200 cows) that use direct merchandizing channels to market calves to a greater extent (13%) (USDA 2009). Larger cattle operations can receive appreciable benefits through group marketing or direct marketing and through economy of scale. A large lot size allows cattle buyers to more closely match the lot size specified by feedlots and decreases the need to pool multiple small lots of cattle (Seeger et al. 2011).

Data from Arkansas show significant price differences among weekly livestock auction locations. In 2010, there was a $13.35/cwt difference between the highest and lowest selling price among 14 locations (Troxel and Barham 2012). Previous reports indicate a positive relationship between yearly sales volumes and calf selling price. These observations indicate that the large volume sales locations sold calves at higher prices because more buyers were present. Indeed, as the number of buyers increased to 15–17 buyers at a sale, calf selling price increased (Troxel et al. 2002). Obviously, competition among cattle buyers is a positive influence on selling prices at a cattle sale.

Sale prices of calves are seasonal. Specifically, a review of video sales determined that the highest beef calf prices were achieved between June 1 and July 31 (Seeger et al. 2011). In contrast, the lowest prices occurred during early marketing (May) or late marketing (September and October). The timing of the low prices correlates with specific transitory phases of beef production systems — in May, the wheat pasture, cool-season stocker cattle, and in September and

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October, the fall weaning of upper-Midwest and Northern U.S. calves.

Lot Size and Calf Bodyweight

At sale barns or auction market facilities, the size of the group being marketed has a significant impact on selling price. Data adapted from two studies (Barham and Troxel 2007; Troxel and Barham 2012) indicate that as group size increases, selling price increases. Price premiums are associated with large lots of cattle, and research shows that maximized selling price was realized when a lot of 60 calves was marketed through livestock auctions. Video auction data across 15 years indicate that the median lot size was 95 calves and buyers paid a small price premium that ranged from $0.00035/cwt to $0.0179/cwt (Seeger et al. 2011). Table 1 shows data that demonstrate the price and group size relationship, which is particularly relevant for small cattle producers.

A relationship between calf bodyweight and selling price is commonly observed. As calf bodyweight increases, selling price decreases (Figure 1). In data summarized from Barham and Troxel (2007) and Troxel and Barham (2012), nearly 75% of calves marketed through auction markets were 550 lbs. or less. Similarly, a summary of video auction data indicates that base sale weight increased from 539 lbs. in 1995-2002 to 561 lbs. in 2003-2009 (Seeger et al. 2011). Video auction data also show the relationship of weight to selling price, as prices declined by amounts ranging from $0.70/cwt to $11.56/cwt with increased calf bodyweight. Variations in the relationship between calf sell weight and price depend on numerous industry-wide functions, including profit margins in the stocker and feedlot sectors.

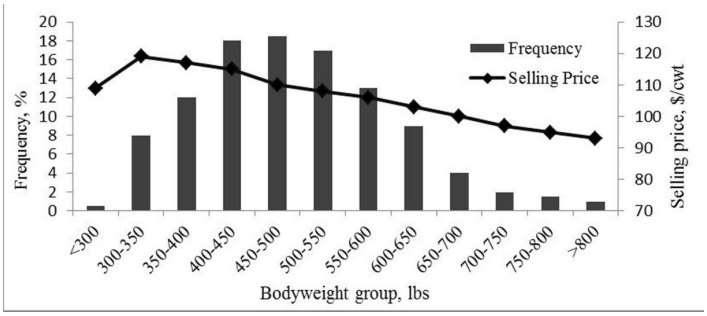

Figure 1. Relationship of calf selling price and frequency of bodyweight group. (Adapted from Barham and Troxel 2007; Troxel and Barham 2012).

Calf Gender

The beef cattle producer has little control over the gender of calves born each year. The annual calf crop will be approximately 50:50 males and females. However, beef cattle producers can control whether male calves remain intact or are castrated. Historically, steer calves garner a higher price compared to heifers. Long-term analysis of video auction data indicates that steer selling price is $8–$10 greater than heifer selling price (Seeger et al. 2011). Aggregate data from Arkansas indicate that bulls and heifers are priced below that of the industry standard of steer prices (Table 2). On average, the discount associated with bulls is not as great as the discount associated with heifers, but an important interaction does occur (Barham and Troxel 2007; Troxel and Barham 2012). As calf bodyweight increased, the discount associated with bulls increased so that at 650–700 lbs., bulls and heifers were priced similarly. Bulls weighing 750 lbs. often sold at a greater price discount compared to heifers. The increased discount of heavyweight bulls is related to the increased risk associated with castration and the related performance retardation of bulls castrated upon feedlot arrival.

Fill and Condition Characteristics

The outward appearance of calves at market can affect the price received. Arkansas data indicate that gaunt and shrunk cattle received $3/cwt to $8/cwt greater sale prices compared to average fill calves (Barham and Troxel 2007; Troxel and Barham 2012). In contrast, calves that were full or very full were discounted $3/cwt to $24/cwt less than the base selling price received by average fill calves. Similarly, body condition of calves can affect selling price. Average cattle are the base for pricing; thin cattle generally receive a small increase in selling price because buyers hope to take advantage of some perceived compensatory gain potential (Barham and Troxel 2007; Seeger et al. 2011; Troxel and Barham 2012). However, very thin cattle are generally discounted because of the potential for past mismanagement that could have long-term implications. Likewise, fleshy and fat cattle are discounted compared to average body condition calves (Barham and Troxel 2007; Seeger et al. 2011; Troxel and Barham 2012). It is a common belief in the industry that highly conditioned calves are likely to lose bodyweight in subsequent production periods; therefore, buyers are unwilling to pay for highly conditioned calves to avoid a decrease in performance.

Genetic and Structural Characteristics

The perceived and actual breed type classification of calves has a significant influence on calf selling price. Nine years of video auction data using Brahman-influenced calves as the base indicate that English x Continental calves received a $3.20 advantage in selling price, and English and English

cross calves received a $4.45 increase in selling price (Seeger et al. 2011). It can be reasoned that calves with some amount of black hair have a greater perceived value via video auction. However, value of calves is influenced by geographic location of the auction and buyers. Similarly, using data from Barham and Troxel (2007) and Troxel and Barham (2012) setting ½ Brahman cross as the base, there was a reported greater sale price for other breed types (Table 3). However, the relative ranking of selling price varies between the previously mentioned analyses. Likewise, relative ranking and actual selling price for purebred and crossbred calves will be dictated by cattle buyer specifications and geographical location of the auction facility.

Polled cattle are perceived as the standard acceptable calf for market. Calves with horns experience a negative price differential by $3.70–$8.03 in reports from Arkansas auction markets (Barham and Troxel 2007; Troxel and Barham 2012). Seeger et al. (2011) indicated that the selling price discount ranges from -$0.85 to -$1.46/cwt; however, discounts were not always observed. The price differential is associated with the need to process horned calves, either by de-horning or tipping of horns. Likewise, horns in the feedlot negatively affect carcass quality and packer acceptance of the cattle.

Muscle scores of 1 and frame scores of large and medium are considered industry standard and garner no premiums for selling price. However, calves with muscle scores of 2 are discounted by approximately $9, scores of 3 by approximately $38, and scores of 4 by approximately $48 (Barham and Troxel 2007; Troxel and Barham 2012). Small-frame scored calves are also severely discounted ($22). These calves do not fit into the production dynamics of intensively managed feedlots and commercial processing.

Health Status and Process

The perceived health status of calves sold through auction markets significantly affects calf selling price. Healthy calves are the established base for assessment. Any perception that the calves were unhealthy resulted in the potential for a severe discount ($10/cwt to $46/cwt) (Barham and Troxel 2007; Troxel and Barham 2012). Visibly sick and lame calves received the greatest discount; "stale" calves were next in severity of discounts, followed by calves with bad eyes and "dead hair" potential. Calves that were preconditioned received a market place premium of approximately $4.63/cwt potential. Video auction data summarized from 2000 to 2009 (Seeger et al. 2011) indicate a selling price advantage for calves that have received verifiable preventative health management. Programs evaluated were identified as Vac-45, Vac-34, or simple viral-vaccination and were compared to non-viral-vaccinated beef calves. Over the course of nine years cattle that received additional health management interventions increased in calf selling price (Table 3). The increase in selling price is a reflection of the real and perceived decrease in risk associated with these calves as they move onto subsequent stages of the beef production chain. Calves that have been weaned, administered health protocols, and exposed to feed result in decreased morbidity and increased performance in the feedlot and improved carcass quality grades.

Age and source verification programs have been advertised to increase the selling price potential of calves that participate in such programs. These programs require active participation by the cattle producer and necessitate defined record-keeping and verification activities. Video auction data recorded since the inception of age and source verification programs in 2005 to 2009 indicate increased selling price for participating calves of $0.52, $1.77, $1.44, $2.14, and $1.58/cwt during the reported years (Seeger et al. 2011). Participation in a certified natural program starting in 2004 showed a higher selling price for calves in 2004 and 2006 through 2008; however, in two years, participation in natural programs generated no additional value to the selling price of calves (Seeger et al. 2011).

Conclusions

Many factors significantly affect calf selling price, regardless of the market channel. These factors are as follows:

1. Date of marketing within the year
2. Base sale weight of the calf lot
3. Sex of calf
4. Cattle breed
5. Number of calves in the sale lot
6. Inclusion of certified health programs
7. Uniformity of calves in the lot
8. Presence of calves with horns

Numerous studies show that beef cattle producers can increase the selling price for their calves by implementing strategic management practices. Ways to increase the selling price of a calf crop include the following:

1. Selling crossbred steers
2. Producing medium- or large-frame calves
3. Having a large lot size
4. Ensuring uniformity of quality, weight, and breed
5. Having light to medium flesh score
6. Making sure calves are polled or dehorned

Beef cattle producers are rewarded when they produce calf crops that minimize the amount of additional processing and risk that subsequent production segments must undertake. Likewise, producing uniform marketing groups can increase production efficiency and result in increased profit potential.

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Table 1. Relationship of market group size and selling price[1]

Group Size	Frequency of Group	Selling Price	Deviation from Average
Single	75	$ 112.54	-$ 0.81
2–5 calves	9	$ 115.32	$ 1.98
>6 calves	6	$ 117.61	$ 4.09

[1]Adapted from Barham and Troxel (2007) and Troxel and Barham (2012).

Table 2. Relationship of calf gender and selling price[1]

Calf Sex	Frequency of Group	Selling Price	Deviation from Steer Price
Bull	18.2	$ 113.89	-$ 6.29
Steer	36.0	$ 115.32	$ 0.00
Heifer	45.8	$ 117.61	-$ 12.42

[1]Adapted from Barham and Troxel (2007) and Troxel and Barham (2012).

Table 3. Relationship of breed type and health protocol on calf selling price

Variable	Description	Price Adjustment
Breed Composition	½ Brahman - ½ Angus	$0.00
	Angus	+ $5.43
	Angus x Hereford	+ $5.76
	English x Continental	+$3.86
	Angus-Hereford x Brahman	+ $3.52
Health Protocol	Non-viral vaccination	$0.00
	Single vaccination	+ $1.30 – 1.85
	Vac-34	+ $2.00 – 4.68
	Vac-45	+ $4.00 – 8.00