Adding Value to the Calf Crop

THE SAMUEL ROBERTS NOBLE FOUNDATION

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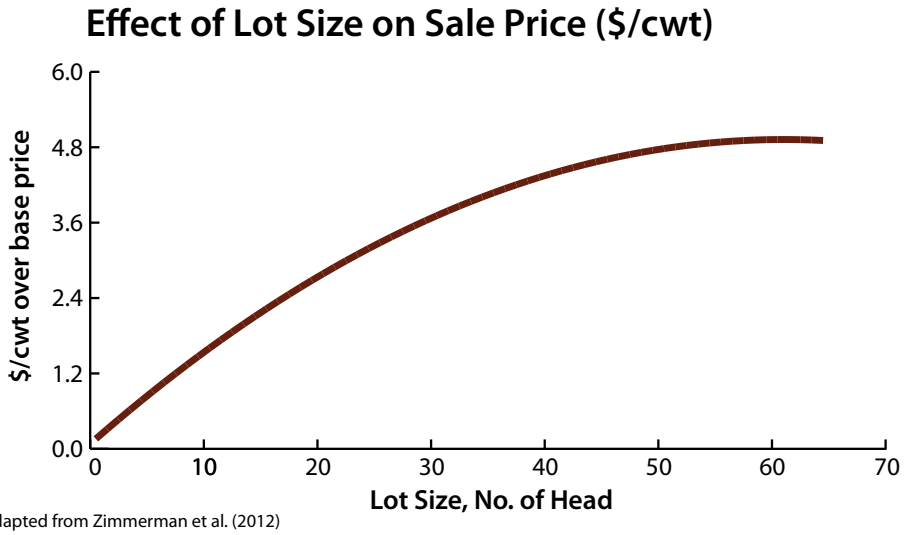
NF-AS-12-02

Profitable beef cattle operations are characterized by management decisions that take advantage of opportunities in the marketplace. In the cow-calf segment of the beef industry, many proven practices exist that increase the value of the calf crop. Using a number of these practices in conjunction, or "stacking" value-added traits, has the potential to increase revenue by more than $100 per head in certain instances. This publication will address several production practices that beef producers can implement in their operations to potentially increase revenue.

Defined Calving Season

A continuous or year-round calving season involves giving bulls access to females throughout the year, which results in calves with a wide range of weights and ages. Defining the calving season is one of the most economically valuable practices a cow-calf producer can implement. One method for achieving a defined calving season is to define the breeding season. This process may take three to five years for cow herds that have the calving season spread over a large portion of the year. The goal is to condense the calving season to 90 days or less. The primary requirement for implementing a defined calving season is to have a separate pasture for bulls during a majority of the year while cows are not being bred. An alternate method of defining the calving season is to not remove the bulls from the cows; but remove cows from the herd that do not calve in the desired timeframe. These cows can be sold as bred cows or sold later as pairs.

Figure 1.



Adapted from Zimmerman et al. (2012)

There are multiple benefits to a defined calving season. The first is selling all calves at one time instead of selling smaller lots sporadically throughout the year. This is important because as lot size increases, sale price also increases (Figure 1).

A second benefit is increased uniformity, which is worth more money to cattle buyers who are trying to put together truckloads of a similar type and size (one truckload equals 50,000 pounds). For example, cattle sold on video auction ranged from receiving a $3 per hundredweight (cwt) discount to a $2 per cwt premium based upon sale lot uniformity (Zimmerman et al., 2012).

Average weaning weight is also affected by the length of the calving season. Researchers at Oklahoma State University showed a 46-pound advantage in weaning weights for producers who used a 75-day defined calving season versus a year-round calving season (Parker et al., 2004). This difference is seen because most year-round calving operations opt to wean only once or twice per year, leading to young, lightweight calves being weaned along with older calves and before reaching their optimal sale weight (450-600 pounds).

Another benefit of a defined calving season is that the production stage of the cow herd is more uniform, enabling the producer to better manage the herd's nutrition and health. Nutrient requirements vary for cattle depending on their stage of growth, pregnancy or lactation. When these production stages are spread out over the entire year for a continuous calving system, it is very difficult to precisely supply all members of the herd with the proper amount of nutrients. Generally, a portion of the herd will be overfed, which is costly, and another portion underfed, which may result in delayed estrus and/or decreased conception rates.

Health programs are also developed based on stage of production. Administering timely vaccinations is difficult and requires more labor when operating a year-round calving season. Many producers who have year-round calving seasons decide not to vaccinate or may administer vaccines at inappropriate times, both of which may reduce sale price and performance.

Castration, Implanting and Dehorning

Castration is used in the beef industry because it decreases aggressive behavior and improves carcass quality (Seideman et al., 1982). Selling steers versus intact bull calves results in significantly higher sale prices – as much as $9.18 per cwt or $45.90 for a 500-pound calf (Alkire et al., 2012). However, in a survey conducted by Oklahoma State University, only 54 percent of small producers responded that they castrate bull calves not intended for breeding (Vestal et al., 2007a).

Many producers cite concerns about lighter weaning weights as a reason for not castrating. Research from Virginia estimated that bulls were 5 percent heavier at weaning than steers (Marlowe and Gaines, 1958). However, research from Oklahoma reported that even though bull calves at 6-7 months of age were heavier than steers castrated at birth, the differences were not statistically significant. In addition, this research demonstrated that bulls castrated at weaning had a reduction in performance after weaning compared to steers castrated at birth (Lents et al., 2006). Bull calves that are castrated at weaning are also more prone to sickness due to increased stress (Massey et al., 2011). Therefore, castration is highly recommended at the earliest age possible.

Implants are growth-promoting compounds used routinely in beef cattle production. Many different products for suckling calves exist, and implanting is one of the most cost-efficient practices a producer can implement. Most implants for suckling calves cost approximately $1 and generally result in increased weight gains of 0.10 pounds per day (Bagley et al., 1989). The use of implants is highly encouraged unless the producer plans to market calves through some type of "natural" program that excludes their use.

Dehorning is another valuable practice that is underused by smaller Oklahoma producers (Vestal, 2007a). Horned cattle are believed to increase the incidence of injury and bruising among pen mates and therefore receive a discount in the marketplace. Alkire et al. (2012) reported the difference between polled and horned calves to be $3.10 per cwt in four Oklahoma auction barns.

Vaccinations and Deworming

Vaccination is an imperative part of building a calf's immune system. Not only will the proper vaccinations help to ensure healthy and productive calves for the owner and the buyer; a good vaccination history is likely to increase their sale price. According to 10 years of video auction data (2001 to 2010), this premium ranged from $1.43 per cwt to $3.29 per cwt based on timing, booster vaccinations and involvement in "branded programs" that conduct audits to ensure certain practices are being followed (Zimmerman et al., 2012). In most cases, the increase in sale revenue due to vaccination will more than pay for the costs of vaccination.

Deworming is another critical part of animal health that is likely to pay dividends to cow-calf producers. According to Vestal (2007b), only 27 percent of small producers in Oklahoma deworm calves between 60 and 120 days of age. Research in the early 1990s in Haskell, Okla., showed that deworming the cow and calf increased calf average daily gain 0.17 pounds per day or 25 pounds over deworming the cow only (Stacey et al., 1995). Responses to deworming may vary depending on environment and stocking rate, but should definitely be examined as a means to increase calf weight and, therefore, value.

In all cases, it is highly recommended that producers work with a local veterinarian to develop a health program applicable to their area and particular operation.

Preconditioning

Preconditioning is the process of weaning the calf and preparing it for the stocker or feedlot phase of production. This process generally includes many of the things already discussed such as castration, dehorning and a complete health program including vaccinations and deworming. Preconditioning requires approximately 45 days, which allows the animal time to acclimate to feed bunks and water troughs, as well as recover from the stress of weaning prior to marketing.

In addition to decreasing stress, preconditioning offers other benefits. One is that cattle should gain weight if fed an adequate nutrition program, resulting in more pounds to sell. Also, shrink at marketing can be minimized in preconditioned calves. Shrink is weight loss due to stressful events such as penning or transportation when feed and water are not available. Studies have demonstrated that preconditioned calves in some instances shrink less than freshly weaned calves, but the findings have not been consistent (Coffey et al., 2001). Low-stress handling appears to be the most important key in reducing shrink.

For spring-calving cow herds, another benefit to preconditioning is that it moves the time of sale from mid-October when cattle prices are historically lower to early December when prices tend to seasonally increase due to a lower supply of feeder cattle. Markets vary from year to year, but historical data shows this to happen in most years.

Before deciding to precondition calves, be sure that it makes economic sense. Financial benefits of the additional weight gain, minimizing shrink and adjusting the marketing time frame may vary widely across producers. Aside from these potential benefits, Zimmerman et al. (2012) reported a premium of $6.55 per cwt for steers weighing 450-750 pounds that were preconditioned a minimum of 45 days. Significant premiums were also realized on cattle that were certified and sold through the Oklahoma Quality Beef Network. In 2010, 350-pound calves received a premium of $5.74 per cwt, but this premium decreased to $2.83 per cwt for 750-pound calves (Williams et al., 2012). This is because lighter weight cattle generally experience higher morbidity when moved into the next phase of production, and preconditioning decreases this risk.

Fill and Condition at Marketing

The amount of gut fill at sale time can greatly influence sale price. This includes not only calves that are extremely full, or "tanked," but also cattle that are gaunt. Cattle that are overly filled prior to marketing will likely lose a large amount of weight in shrink and, therefore, buyers may place heavy discounts on those cattle. Some believe that moderately shrunk calves will receive a premium because of the potential for compensatory gain, but this observation is not well documented.

Studies examining these price differences are not consistent, which may be caused by the subjectivity of the measure, current market conditions and also the marketing channel used. Researchers at Oklahoma State University in 1999 reported that cattle sold in eastern Oklahoma auction barns and classified as either "gaunt" or "tanked" were discounted $10.32 per cwt and $9.08 per cwt, respectively (Smith et al., 2008). However, the latest study from Oklahoma State University showed no statistical difference in sale price for gaunt versus full calves (Williams et al., 2012). Producers are encouraged to market calves with average fill to ensure that steep discounts are not incurred.

The existence of sale price differences for the amount of body condition, or fat cover, at marketing is more consistent. Thin cattle are likely to be viewed as possessing underlying health issues and discounted sharply, as much as $9.26 per cwt according to Williams et al. (2012). Fleshy steers are also typically discounted, although not as drastically. Avent et al. (2004) reported discounts of 60 cents per cwt while Bulut and Lawrence (2007) estimated discounts at $2.37 per cwt. Calves may become too fleshy if creep-fed, so producers must account for potential market discounts when using this practice.

Commingling and Communication

Order buyers recognize the value of uniform truckload lots and are willing to pay top dollar for these groups. However, many producers do not have enough cattle to capture this premium. If only a small number of value-added cattle are at the sale, these cattle will be commingled with other cattle of unknown history in order to fill a truckload. In these cases, it may greatly benefit a producer to commingle with similarly produced cattle from other producers before the sale to increase the lot sizes. Many producer alliances and preconditioned calf sales have been formed to capture this additional revenue. It is highly recommended that producers with the goal of marketing preconditioned feeder cattle explore these options.

If a producer does not wish to take part in one of these programs, then the practices that have been implemented on the ranch need to be communicated to auctioneers and potential buyers for increased sale prices to be realized. Buyers will not pay top dollar for cattle with an unknown history. Alkire et al. (2012) reported that a premium of $3.20 per cwt was received when an auctioneer commented on the history and quality of the cattle in the sale ring.

Sale Location

The importance of the location where cattle are sold should not be overlooked by producers. Auction barns will differ in average feeder calf price due to size of the facility in terms of number of cattle sold and, more importantly, proximity to their final destination. Larger cattle (>700 pounds) are mostly purchased for placement into feedyards. Most cattle in southern Oklahoma and northern Texas will be finished in feedyards located in the Southern Great Plains. Therefore, as distance from the auction barn to the feedyard decreases, sale price will increase because of lesser transportation costs incurred by the buyer.

This trend does not always hold for smaller cattle as they may be purchased as stocker calves and placed on pasture. Time of year as well as pasture conditions will influence the demand for smaller cattle, which can impact sale prices at different locations. Producers should research sale prices for each class of cattle at potential markets prior

to selling. This information can be accessed at the USDA Agricultural Marketing Service website (www.ams.usda.gov). Use this information along with associated costs of transportation to make an informed decision on where to market cattle.

Conclusion

The practices outlined in this publication are general recommendations for cattle producers to potentially receive additional revenue for their calves. These practices may not be economically justified in all circumstances, but they are in many cases. The need for implementation of these practices is variable among operations due to each individual's goals, resources and current market conditions. Producers are encouraged to contact experts such as Noble Foundation consultants or local Extension agents to explore how these practices might fit their individual operation.

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