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"Decoding" the Alphabet Soup of Animal I.D. and Marketing Programs

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MANAGING AND MARKETING CULL COWS

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INTRODUCTION

Beef cows are culled from the herd for a variety of reasons including reproductive failure, age, and unsatisfactory performance, among others. Depending on the relationships between cull cow and calf prices, and the herd culling rate, cull cow receipts generally account for 15-30% of income from the cow-calf enterprise (Feuz, 1995). However, cows are often sold at the time of culling without regard for opportunities to add value and capture additional revenue.

CULL COW MARKET

The cull cow market exhibits very strong seasonal price trends (Figure 1). In the Northern Great Plains, the market is generally the highest in the late-spring and early-summer months and lowest in the late-fall and early-winter. Biologically this makes a great deal of sense. The vast majority of cowherds in this region calve in the spring. Cows remaining in the herd during this time are likely pregnant or have recently calved. In either case, they are not likely destined for market, causing the supply of cull cows to be low and the prices to be high. On the other hand, in the late-fall and early-winter months, most producers are weaning and pregnancy checking the herd. Consequently, large numbers of cows are likely to flood the market and depress prices. Any strategy that can be implemented to market cull cows outside of this seasonal price trend can help improve revenue.

Several strategies can be implemented to market cull cows at more beneficial times. Spring-calving cows that lose their calves early should be marketed (assuming they are destined for market) as soon as possible to take advantage of high spring prices. Cows that have been early weaned should also be marketed during seasonal price highs. This can be of particular benefit during drought years when stocking rates have been reduced or when cows have been previously identified as culls because of age, calving difficulty, disposition, or any number of other reasons. Finally, cows can be fed for a period of time to delay marketing to more favorable periods. Along with delaying marketing, feeding cull cows for a period of time can increase final weight and improve dressing percent and quality grade.

COW GRADES

Slaughter cows generally fall into one of five grades: Commercial, Utility-Breaker, Utility-Boner, Cutter, and Canner, in order of decreasing desirability. More commonly, mature cows (greater than 4 years of age) will fall into the bottom three grades. Younger cows are more

likely to be in the Commercial and Utility-Breaker grades. It is also possible for young cows to qualify for the same grades used for young cattle (Prime, Choice, Select, and Standard).

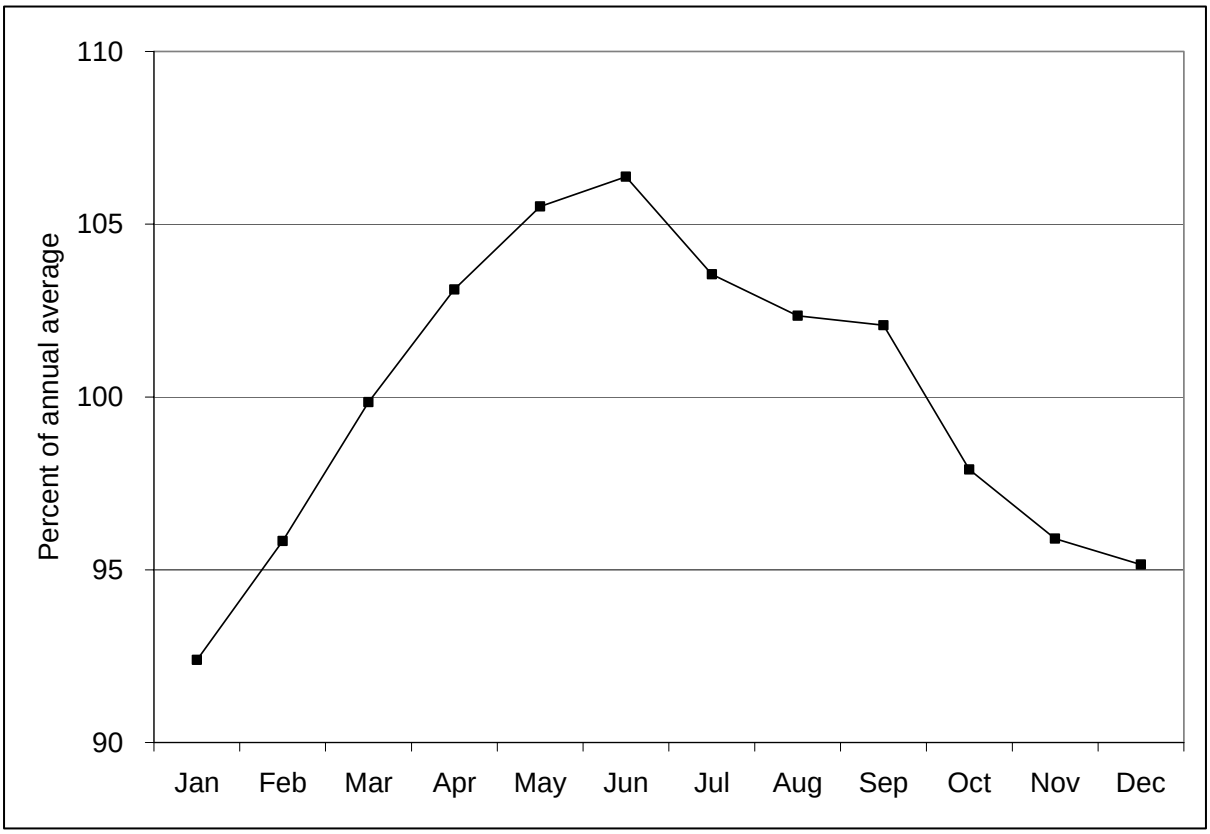

Figure 1. Cull cow prices at Sioux Falls, South Dakota, 2000-2003. Prices were averaged across quality grades (Commercial, Utility-Breaker, Utility-Boner, Cutter, and Canner). Based on USDA Agricultural Marketing Service data.

Cull cow prices will fluctuate based upon grade. In general, the more desirable the grade, the higher the price. Research has clearly demonstrated that feeding cull cows a high-energy diet for as few as 50 days can significantly increase final weight improve grade (Matulis et al., 1987, Pritchard and Berg, 1993). Increasing grade and delaying marketing for a period of time presents producers with a tremendous opportunity to add value to cull cows and increase revenue. Table 1 illustrates several feeding scenarios and the associated increase in price ($/cwt) received by increasing grade from Cutter to Utility-Boner and marketing at a more favorable time.

Based upon the recent historical prices from Sioux Falls, South Dakota, it appears that a number of scenarios present opportunities for capturing additional revenue by feeding cull cows to improve quality grade (Table 1). The largest changes were in scenarios where cattle were fed from mid-winter months (December and January) through early-spring (April and May). This trend has shifted somewhat from those reported previously (Strohbehn and Sellers, 2002). Data from Sioux Falls, South Dakota, from 1986 to 2001 and from Torrington, Wyoming, from 1992 to 2001 showed the greatest potential for improving revenue to be feeding cows from October and November through February and March. To

effectively estimate potential returns, producers should evaluate a number of scenarios over several periods of time. It is also important to consider the ban on Canadian beef imports. The United States is not likely to allow import of cull cows from Canada in the near future, lending support to the domestic cull cow market.

Table 1. Market price change with upgrading cull cows from Cutter to Utility-Boner at Sioux Falls, South Dakota, 2000-2003. Based on USDA Agricultural Marketing Service data.

Feeding period	$/cwt change	% change
Sep to Dec	0.54	1.3
Sep to Jan	(0.71)	-1.8
Oct to Jan	0.95	2.4
Oct to Feb	2.59	6.7
Nov to Feb	2.35	6.0
Nov to Mar	4.03	10.3
Dec to Mar	4.87	12.7
Dec to Apr	6.30	16.5
Jan to Apr	6.78	18.0
Jan to May	7.73	20.5
Feb to May	6.05	13.3
Feb to Jun	6.20	15.7
Mar to Jun	4.86	11.9
Mar to Jul	3.98	9.8

FEEDING AND MANAGING CULL COWS

Some basic elements that should be evaluated before feeding cows include facilities and equipment. Since cows are substantially larger than most feedlot steers they will require more bunk space. Most recommendations suggest between 20 and 24 inches of bunk per animal. It is also important to have a good source of clean water. Good recommendations for the amount of water required by an open cow in a feedlot setting have not been established. However, the National Research Council suggests that an 1100-lb gestating cow requires approximately 6 gallons of water per day (NRC, 1996). It is also important to have adequate equipment for feed delivery. Given the high-energy diets cull cows are likely to be fed and the associated challenges with metabolic disturbances, a mixer wagon with a scale is recommended. There has been some interest in utilizing self-feeders for cull cows. While this is an intriguing concept, it has not been investigated in reviewed literature.

Selecting the “right kind” of cows to feed is also crucial to the success of the program. First and foremost, cull cows should be sound and healthy and in thin to moderate condition. Cows that are unsound or injured should be marketed directly to a packer. Unhealthy cows should also be avoided. Keep in mind, if a treatment is required, it will

likely come with a slaughter withdrawal, which could delay marketing. It is also recommended to work with a veterinarian to plan a vaccination and anthelmintic strategy.

As a side note, it may be worth while to check for pregnancies a second time, possibly via ultrasound. It is not uncommon for “open” cull cows to be taken to the auction barn carrying a calf. Pritchard and Berg (1993) purchased 306 “open” cows from auction markets for an average of $500. Seventy of the original cows were more than 5 months pregnant and were immediately resold for an average of $700. The producers that sold the cows lost out on a substantial price differential between an open cow and a bred cow. It is possible to use an abortificient; however, the effectiveness of these products declines rapidly as the pregnancy approaches 150 days (Pritchard and Berg, 1993).

At the beginning of the feeding period cows should be slowly adapted to a finishing diet much like yearling cattle. Cull cows are generally coming from a forage-based diet and will need some time for their rumen to adapt for a concentrate-based finishing diet. Generally it is best to start with a diet containing approximately 50 Mcal NEg/cwt and gradually step up over a period of 2 to 3 weeks to a diet containing 60 to 63 Mcal NEg/cwt and 11.5% crude protein. Diets do not need to be exotic to accomplish the task at hand. Cull cows are usually mature, non-gestating, and non-lactating so their requirements are quite low.

Grazing may also be a viable option for producers to feed cull cows. In regions where winter range is available, cull cows could be grazed and supplemented to support reasonable rates of gain. Grazing is even more appealing if crop residues, especially corn stalks, are available. The general rule of thumb for gestating cows is 1 acre per cow per month. However, when feeding cull cows, it may be desirable to allow more acreage per cow to provide more corn for a longer period of time. Under these conditions, it is not unreasonable to expect a cow grazing corn stalks to gain 1.5 or more lb/day. Over 2 months, a cow could conceivably gain 90 lb, or approximately one body condition score, or more. As the grazing period progresses, cows should be supplemented with a natural protein source to support forage digestion.

A common question when feeding cull cows is how long should they be fed. One of the primary concerns associated with time on feed is fat color. It is more desirable for white fat as opposed to a more yellow fat color. Yellow fat is a result of the cows consuming high amounts of carotene, which is high in forages. High-grain diets, which are inherently low in carotene, will help convert yellow fat to white fat. Some research suggests that feeding a high-grain diet for as few as 56 days will result in a significant change from yellow to white (Schnell et al., 1997). However, other research has not documented a change in the amount of yellow fat in cows on feed for as long as 105 days (Pritchard and Berg, 1993).

Beyond the conversion of yellow fat to white fat, the decision on how long to feed cows should be based upon the condition of the cows, expected feedlot performance, feed cost, and market timing. As mentioned previously, cows that are over fed can be subject to price discounts. To avoid discounts cows that begin the feeding period in moderate (body condition score of 5) or better body condition should be fed for shorter durations. Cows that are thinner, can be fed for longer periods of time; however, it is important to remember that

as the duration of the feeding period increases, it is possible that feed efficiency may decrease.

FEEDLOT PERFORMANCE

Cull cows can gain tremendous amounts of weight in relatively short times on high-grain diets. South Dakota State University research reported average daily gains of 2.81, 2.97 and 3.10 lb/day for cows fed for 50, 77 and 105 days, respectively (Pritchard and Berg, 1993). Sawyer et al. During a 90 day feeding period, Funston et al. (2003) observed gains of 4.63, 3.55, and 3.46 lb/day in cows from three different sources fed for 90 days. Cow fed for shorter durations will likely experience more rapid gains. Faulker et al. (1989) compared the performance of cows fed for 42 or 84 days. They observed a clear advantage for cows fed for shorter periods (6.04 versus 3.53 lb/day for cows fed 42 or 84 days, respectively)

The tremendous gains described in the previous paragraph do not come with out a cost. Compared to non-ruminants, beef cattle are inherently inefficient in converting feed to gain. Normally, calves and yearlings that enter a feedlot can be expected to produce a pound of gain from approximately 6 to 7 lb of feed. However, to achieve that same pound of gain, a cull cow is likely to require 7.5 to 9.5 lb of feed depending on how long she is fed. Faulker et al. (1989) fed mature cows (4 to 10 years of age) for either 42 or 84 days. Cows fed for 42 days converted feed to gain at a rate of 4.66:1, whereas, cows fed 84 days converted feed to gain at a rate of 8.43:1. In contrast, Pritchard and Berg (1993) observed no difference in feed:gain in cows fed for 50, 77, or 105 days (8.99, 9.20, and 9.09, respectively). Feed conversion may also depend on the age of the cattle. Sawyer et al. (2004) classified cows as young (3 and 4 year olds), low mid (5 and 6 year olds), high mid (7 and 8 year olds), and aged (9 year olds and older). When the cows were fed for 56 days, feed conversion decreased linearly with age, from 6.17 in the young cows to 10.1 in the aged cows.

With the high average daily gains and relatively poor feed conversion it is not unreasonable for a cow to consume dry matter at between 2.25% and 2.6% of her body weight (Pritchard and Berg, 1993, Cranwell et al., 1996, Funston et al., 2003). This level of intake can result in high feed costs. Therefore, any management factors that can be used to improve animal performance will help improve the profitability of feeding cattle. To help improve feed efficiency, all cull cows should receive an aggressive implant strategy and be fed an ionophore and melengesterol acetate (MGA) at recommended levels.

IMPLANTING

Implanting cull cows can improve feedlot performance, carcass weight and tenderness. However, responses are likely dependent upon the type of implant used. Two primary types of implants have been used in cull cow research experiments – estrogenic and androgenic. Estrogenic implants cleared for use in cows (Synovex-H, Implus-H, and Component E-H) are based on a combination of 200 mg testosterone and 20 mg estradiol benzoate. Androgenic implants cleared for use in cows (Finaplix-H and Component T-H) contain 200 mg trenbolone acetate (TBA). Several implants that provide a combination of

estrogenic and androgenic comlb also exist; however, these have not been evaluated in peer-reviewed literature.

Research dating back to the early 1980s has evaluated the impact of implanting cull cows on feedlot performance and carcass characteristics. Through the years, it appears clear that implanting cows with the estrogenic comlb zeranol (Price and Makarechian, 1982) or testosterone, with (Spire et al., 1998) or without (Faulkner et al., 1989; Matulis et al., 1987) MGA does not improve animal performance or carcass characteristics. On the other hand, implanting cull cows with the androgenic compound TBA has resulted in improvements in feedlot performance, carcass weight, ribeye area, and yield grade (Garnsworthy et al., 1986; Pritchard and Berg, 1993).

Few experiments have investigated combinations of androgenic and estrogenic implants on performance and carcass characteristics of cull cows. Cranwell et al. (1996b) did not find any advantage to the use of either an androgenic implant (200 mg TBA) or an estrogenic implant (200 mg testosterone + 20 mg estradiol benzoate) relative to non-implanted controls. When both implants were administered together, weight gain, final weight and feed efficiency were improved relative to the control group, but were not different than either of the single implant treatments. Both the androgenic and estrogenic implants improved yield grade relative to non-implanted controls. Interestingly, the authors also observed a significant improvement in ribeye tenderness (Cranwell et al., 1996a). Hot carcass weight was increased by the estrogenic implant relative to all other treatments. Funston et al. (2003) evaluated the effect of a combination implant (200 mg TBA and 28 mg estradiol benzoate) on cull cow performance and carcass characteristics. In this experiment, implanting resulted in improved average daily gain, final weight, hot carcass weight, ribeye area, and yield grade. In contrast to the reports where cattle were implanted with TBA alone, Funston et al. (2003) observed a reduction in marbling in implanted cattle.

DOWNERS

Non-ambulatory cows or “downers” are no longer eligible for slaughter for human consumption. On January 12, 2004, the Food Safety Inspection Service (FSIS) published three interim final rules to address concerns surrounding bovine spongiform encephalopathy (BSE). The rules were published as emergency rules and were effective immediately upon publication. As a result, any bovine that cannot rise from a recumbent position or that cannot walk will not be eligible for slaughter and must be condemned.

This regulation bears particular importance to beef producers and cattle feeders interested in feeding cull cows. From an animal welfare perspective and to avoid the potential loss of a sale animal, those handling cull cows should pay particular attention to cattle with ailments that hinder mobility.

ECONOMICS

While the increase in price and associated increase in revenue is certainly appealing, feeding cull cows does not result in an automatic profit. It is important to carefully consider the costs (feed cost, yardage, interest, death loss, and freight) involved in feeding cull cows.

As mentioned previously, cull cows could consume 2.5%, or more, of their body weight as dry matter. For a 1200-lb cow that equates to 30 lb DM. Assuming the diet is comprised of corn silage ($20/ton), corn ($1.75/bu), soybean meal ($175/ton), and a supplement ($300/ton), the cows would consume 44 lb as fed at a cost of $1.36 per day. If the cow gains 3.5 lb.day, the feed cost of gain would be $0.38/lb.

Cows will also be charged yardage by a commercial yard or need to cover expenses related to labor and facilities for producers feeding their own cows. Generally, yardage on young cattle will be between $0.25 and $0.30 per head per day. Yardage charges for cows may be slightly higher.

Freight may also be a large expense associated with feeding cows. A triple axle trailer (56,000 lb maximum load) can carry 40 cows @ 1,400 lb or 35 cows @ 1,600 lb. The number of cows on a load may be less that what is normally expected of fat cattle. Also, high fuel prices have caused an approximately 50% increase in the per mile charge for commercial hauling. It is not uncommon for per mile charges to exceed $3.25 per loaded mile. Producers should carefully evaluate the impact of freight on their bottom line.

For more detailed analysis of the profit potential from feeding cull cows, producers should complete a partial budget. An example of a partial budget for feeding Canner-grade cull cows for 105 days can be found in the Beef Cattle Handbook (Feuz, 1999).

SUMMARY

Cull cows represent a substantial portion of the annual income on a cow-calf operation and should not be overlooked when it comes to marketing to add value. Several factors determine the potential for adding value to cull cows. Cull cow prices are very seasonal and producers need to be cognizant of where there marketing strategy fits within the seasonal price trends. Feeding cull cows is a viable option to improve grade and delay marketing. However, careful consideration should be paid to the type of cows to be fed, the cost associated with feeding cows, and when the cows will be marketed. Cull cows are not efficient in a feedlot and need to have every possible management strategy implemented to maximize feed conversion (e.g. MGA, ionophores, and implants). When well planned and carefully managed, feeding cull cows can improve revenue and potentially profit on a cow-calf operation.

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