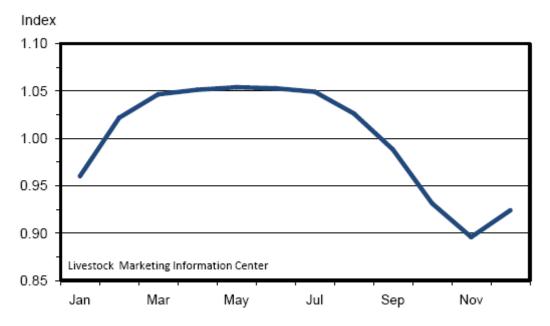## Cull Cows as a Significant Source of Revenue for Stocker Operators and Large Cow-Calf Producers

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Cull cows are often considered a by-product of cow-calf operations. Usually, open cows are identified at pregnancy diagnosis, sorted directly into a separate pen, loaded that day (or as soon as the calves are weaned) and transported to a livestock marketing facility. Oftentimes, scheduling the herd pregnancy check even revolves around days when the local auction has a sale so that the culls can be immediately liquidated. As a matter of production management, it is critical to remove non-producers from the herd. However, as a matter of economic management, the significance of cull cow revenue is often overlooked. In fact, cull cow sales generally represent between 15 – 30% of the sales receipts from a cow-calf operation. Therefore, optimizing the net return on cull cow sales can have a major impact on the overall profitability of the enterprise.

A 2003 survey of Mississippi cow-calf producers asked what most influenced their decision to market calves (Mississippi Agriculture & Forestry Experiment Station Bulletin 1126; *Attitudes of Small Beef Producers*). A majority of those who responded cited their calves reaching a set target weight or the market reaching a certain price as the major deciding factor. However, this concept does not appear to carry over to marketing cull cows. The major factors that should be considered when deciding to hold cull cows are current and expected cull cow values and feed costs.

Figure 1

SEASONAL PRICE INDEX -- UTILITY COWS
Southern Plains, 1997-2006

As with many other commodities, cow prices display seasonal fluctuations that can provide a good estimate of the expected relative market value from month to month (Figure 1). The cull cow market in Mississippi peaks in March and April, begins to decline in July and eventually reaches the lowest point in November. Given this type of seasonal fluctuation, a simple equation can be used to determine the profitability of holding cows over a defined period of time:

Profit = Sale Wt. × Sale $ – ((Cull Wt. × Cull $) + Cost of Gain + Death Loss + Marketing and Meds)

In this equation, the "**Sale Wt.**" is the expected weight of the cows when marketed and is calculated as the amount of weight the cows will be able to gain by the projected market date given feed and forage availability. "**Sale $**" is the expected value (per weight basis) of the cows on the projected sale date. "**Cull Wt.**" is the current weight of the cows when the culling decision is made and gives the starting point for projecting sale weight while "**Cull $**" refers to the value of the cows (on a per weight basis) at the time of culling. Cost of gain can be calculated by developing a ration, using feed and forage available at a reasonable cost, that will accomplish the projected sale weight by or before the projected sale date. A conservative estimate of death loss should be made based on previous experience for a given area or set of cows. Using this simple equation should give an adequate prediction of whether a profit can be realized from holding cull cows. This equation can also be used by stocker operators considering whether to purchase cull cows during market lulls, add value and sale for a profit. To use this equation in determining whether to purchase cull cows, simply replace "**Cull Wt.**" and "**Cull $**" with the purchase price.

An example scenario for a spring calving herd would be that pregnancy check is performed sometime between July (about 45 days after bulls are removed) and September (when calves are weaned) to identify open cows. Along with open cows; lame, poor mouth or poor producing cows are identified and added to the cull list. If calves are weaned in September, the cow market has already begun to decline from its peak in July and will not return to comparable levels until March or April. Therefore, if only considering market trends it would be beneficial to winter the culls until the spring market rebound. However, there is a substantial cost associated with feeding cows through the winter months and, depending on available resources; it may cost more than the potential profit to hold these cows over. For example, cull cows might weigh 1050 lbs. with a Body Condition Score (BCS) 4 at weaning. If they can be fed to a BCS 6 over the winter, it will likely translate to a weight gain of 200 lbs. On a ration of fair quality hay supplemented with soybean hull pellets and corn gluten, this gain would cost approximately $218. According to market reports in Mississippi, cull cows were worth about $43.00/Cwt. in September 2007 and, with an index of approximately 1.1, are expected to be worth $49.45/Cwt. in March 2008.

Ex:
Profit = 1250 lbs × $0.4945 – ((1050 × $0.43) + $218 + 2% Loss + $40)
Profit = -$103.74 per cow

In this basic example, feeding the cull cows through the winter with relatively expensive feed sources is not profitable. However, one important factor that has not been considered in this scenario is that the value of these lean cows (85 – 90% Lean) can be further improved if, after sufficient weight gain, their grade is improved and they are sold as 80 – 85% Lean, High Yield Boners. Traditionally in the southeast, this would translate into a $5/Cwt. price improvement. In this case, wintering the cull would still not be a profitable venture (**-$42.49** per cow).

The most obvious way to change the equation to be more profitable is to reduce the "**Cost of Gain".** This is where the southeast's ability to utilize winter annual grazing comes into play. Assuming a $0.45/lb cost of gain for mature cows on annual ryegrass, the cost of adding 200 lb. to a 1050 lb. cow is $90. In the equation used above, this would translate into a profit of **$85.51** per cow if they move into the more desirable grade or **$24.26** per cow if they remain in the 85 – 90% Lean grade. This would assume early ryegrass availability. However, stocker operators who are interested in purchasing cull cows and adding value have the opportunity to wait until the lowest point of the cull cow price cycle (around November) when ryegrass should be plentiful. In this case, if cows are bought at $39.00/Cwt. and marketed in April or May after the cows have reached the target weight of 1250lb., the potential profit from the above equation would be approximately **$127.51** for High Yield Boners and **$66.26** for 85 – 90% Lean.

As with most other agricultural enterprises, production volume will be a deciding factor when considering whether to stocker cull cows. The equation used in these examples does not account for labor or opportunity costs. For small cow-calf producers who might have just a few culls and limited (high cost) feed resources, holding these cattle will most likely not be profitable. However, for large cow-calf producers or stocker operators who have the opportunity to limit cost of gain and realize smaller profit margins per cow on larger total numbers, running stocker cows can prove to be a lucrative endeavor.