

Cull Cow Value Determination

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Returns from the sale of cull cows and bulls represent about 16% of the total income to the average cow/calf operation (NCBA, 1999). Therefore, the inattention to marketing this salvage portion of the herd can have detrimental effects to the profitability of a cow/calf operation. When cows are removed from the breeding herd and marketed for beef, their value is predominately related to two major aspects. The first being the carcass value and the second that of by-product value. Carcass value is generally determined by the amount and composition of boneless meat derived from the carcass. Cow carcasses produce two types of products: whole muscle cuts from the round, rib, and loin, and beef trimmings (or boneless manufacturing beef), which are sold on a lean content basis. As an example, lean trimmings (85 lean/15 fat) are currently worth \$110.00 cwt, in contrast, fatter trimmings (65 lean/35 fat) are substantially lower in value (i.e. \$61.50 cwt, USDA, 2002). Therefore, as percentage lean increases, value of a cow carcass also increases. The value of whole muscle cuts removed from cow carcasses generally have a greater value per pound than even the leanest trimmings and this is why they are removed intact. If a cow is in very poor condition or very light muscled, then the whole muscle cuts that are derived from such carcasses are of so poor quality that they do not warrant removal. Therefore, a lean, emaciated cow will not be as valuable, even though the trimmings that are removed are lean, as a cow in better condition and muscling, which produces whole muscle cuts and trimmings of a desirable lean content.

The USDA Agricultural Marketing Service tries to reflect this relationship in the statewide market news report by breaking

down prices received at auction by percentage lean of the cow. Market News Reporters have developed a system to estimate the lean content of a live cow by utilizing three easily observed live animal traits: outside fat (subcutaneous fat), live weight, and muscling. The process starts with estimating the amount of fat over the live animal with particular attention given at the 12th/13th rib area. This fat estimation can be adjusted up or down based on fat distribution of the rest of the animal. This amount of fat is converted to a Preliminary Percent Lean according to the chart below:

Fat (in)	PYG ¹	% Lean
Ab 0 ²	1.8	90
.0 ³	2.0	88
.1	2.2	86
.2	2.5	83
.3	2.7	81
.4	3.0	78
.5	3.2	76
.6	3.5	73

¹Preliminary Yield Grade.

²Absolute zero – no visible fat anywhere on carcass.

³No fat at 12th rib; thin fat visible in other areas.

The Preliminary Percent Lean is adjusted for live weight by subtracting .8% for each 100 lbs over 1,100 lbs or adding .8% for each 100 lbs under 1,100 lbs. The third and final step is to adjust for muscling according to the chart on the following page:

Muscle Score	Adj
Thin ⁻	-.66
Thin	-.33
Thin ⁺	0
Average ⁻	+.33
Average	+.66
Average ⁺	+.99
Thick ⁻	+1.32
Thick	+1.65
Thick ⁺	+1.98

The next determinate or factor to derive live price from carcass value is dressing percentage, which is represented by the following equation: $(\text{carcass weight} / \text{live weight}) \times 100 = \text{dressing percentage}$. The higher this percentage, the greater proportion of the carcass value that is translated back to live value. Four major factors contributing to dressing percentage are fat, muscling, fill, and weighing conditions. Fatter animals have higher dressing percentage than do leaner animals. Heavier muscled cows will have higher dressing percentages than would lighter muscled cows. In addition, cows with less gut fill will have a higher dressing percentage than would cows with large amounts of gut fill. This is also closely related to the fourth factor of weighing conditions. The longer the cow has been held off feed or water prior to weighing, the higher the dressing percentage. Therefore, if someone is purchasing live cows for slaughter, then weighing conditions become very important. So, information about how long the cattle have been gathered, how they have been sorted and handled, even weather will contribute to shrink that has a direct influence on dressing percentage. If cows are sold directly to a packer on a carcass basis, then these issues are not relevant because the value is determined on a carcass weight basis.

The next factor that must be considered is the by-product value. The hide represents slightly over one-half of the total by-product value, so anything that detracts

from its' value (i.e. brands, parasites) can have a dramatic effect. The rest of the by-products that largely contribute to value are items like oxtails, tongue, cheek meat, hearts, liver, tripe, etc. Most packers average from 7 to 25 percent condemnation rate on by-products depending on the dress-off item, which is generally due to disease or some parasitic condition (NCBA, 1999).

Demand for beef also has a substantial effect on cull cow value. Beef demand, especially for ground beef, can be influenced by many things and is outside of the scope of this presentation but needless to say, if beef demand is down the value of cull cows will also be reduced. This is also influenced by competing sources of boneless beef like imported boneless manufacturing beef. Also, at certain times of the year, beef chucks from Choice/Select steer and heifer beef can be cheap enough to compete with domestic cow trimmings, which can also suppress the value of culled cows.

Carcass defects are becoming a greater issue for packing plants that harvest cows culled from the breeding herd because their customers are putting specification limits on what they will accept. Almost all ground beef producers will not accept meat from downer cows or cancer-eyed cows. Both of these conditions can result in whole carcass condemnation. Two other defects that cause serious repercussions for the industry and often result in significant portions of the carcass being condemned, are bruising and the presence of birdshot or buckshot.

The first National Non-Fed Beef Quality Audit summarized the corrective actions needed to assure the maximum value of cows marketed can be realized (NCBA, 1994). First, manage cattle to minimize defects and quality deficiencies. Secondly, monitor the health and condition of cows and thirdly, market cows in a timely manner. In today's marketing environment these are not things that should be done, but are actions that

must be done if a producer wants to maintain an outlet for culled cows.

Literature Cited

NCBA, 1994. Executive summary of the national non-fed beef quality audit. Denver, CO.

NCBA, 1999. Executive summary of the 1999 national market cow and bull quality audit. Denver, CO.

USDA, 2002. Agricultural Marketing Service, Livestock and Seed Division. Washington, D.C.

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