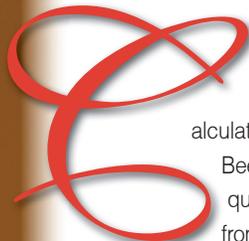


# Lost Opportunities Identified in the NBQA-2011

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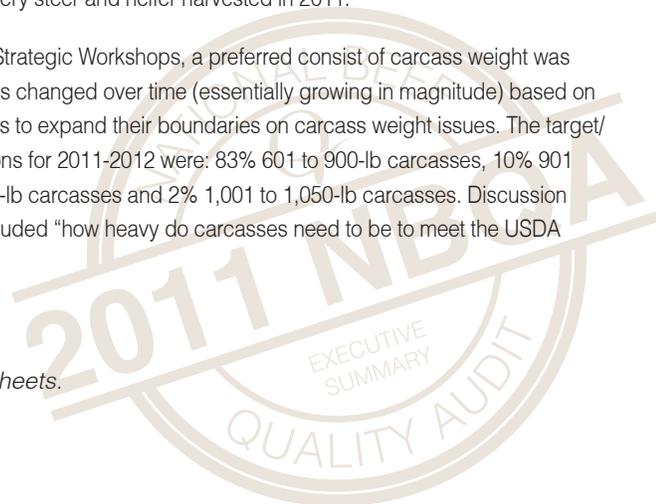
Calculations of “lost opportunity” values resulting from defects identified during completion of the National Beef Quality Audit (NBQA) have long been used to document industry progress as it strives to improve quality and safety of beef. While the logic or method of calculation to derive these values has changed from audit to audit, and reflects only a window of time during which data were collected, their use remains the same. For every steer and heifer harvested in the fed beef cattle industry for the given year, some amount of money is lost for each given defect or trait in which expectations were not met—and that has a cost. These values are currently calculated for quality grade, yield grade, carcass weight, hide/branding defects and offal/carcass condemnations and have been standardized to allow contrasts among the NBQAs. The National Beef Quality Audit-2011 was conducted in 2011-2012 and the Strategy Workshop for the project was held in Denver, CO in April of 2012; this fact sheet provides explanation of how each value associated with quality-improvement opportunities was calculated, in general terms, following the Strategy Workshop using 2012 prices. Table 1 presents results, as well as macro-events in the marketplace that should be accounted for when comparing among audits.

**Quality Grade:** To calculate value losses associated with USDA quality grade nonconformities, packers, retailers and restaurateurs were asked what the desired quality grade “consist” (i.e., the percentage of the fed beef carcass population composed of carcasses of each potential USDA quality grade) was for their business during each Strategy Workshop conducted following data collection for each NBQA. Then, all parties involved in each NBQA Strategy Workshop reached consensus on the overall optimal industry consist. This “optimal” consist changed among NBQA audits as participants in the Strategy Workshops tended to change or modify their product offerings to consumers based on interpretation of market signals. The optimal industry USDA quality grade consist for 2011-2012 was: 5% Prime, 31% Upper 2/3 Choice, 33% Low Choice, and 31% Select. From these data, and from yearly averages for premiums and discounts associated with each quality grade category, an average loss was calculated. This loss was \$27.83 for every steer and heifer harvested in 2011.

**Yield Grade:** Value losses due to nonconformities associated with USDA yield grades were calculated in the same manner as those for losses associated with USDA quality grade nonconformities by gaining a consensus of desired production distribution for the industry. The optimal industry USDA yield grade consist for 2011-2012 was: 12% yield grade 1, 21% yield grade 2A (2.01-2.5), 28% yield grade 2B (2.51-2.99), 22% yield grade 3A (3.01-3.5), 11% yield grade 3B (3.5-3.99), 6% yield grade 4, and 0% yield grade 5. Interestingly, although data used to make these computations were considered to be reflective of the actual beef carcass population, only a small fraction of beef carcasses today actually are assigned a USDA yield grade in practice—reflecting shifting emphasis in marketing. Nonetheless, the optimal USDA yield grade consist again was compared to the actual production and, using yearly averages for premiums and discounts associated with each USDA yield grade grouping, lost value was calculated. This loss was \$6.81 for every steer and heifer harvested in 2011.

**Carcass Weight:** During the NBQA Strategic Workshops, a preferred consist of carcass weight was determined. This consensus value has changed over time (essentially growing in magnitude) based on a willingness of users of beef products to expand their boundaries on carcass weight issues. The target/acceptable carcass weight distributions for 2011-2012 were: 83% 601 to 900-lb carcasses, 10% 901 to 950-lb carcasses, 5% 951 to 1,000-lb carcasses and 2% 1,001 to 1,050-lb carcasses. Discussion concerning “weight” typically has included “how heavy do carcasses need to be to meet the USDA

Third in a series of NBQA fact sheets.



quality or yield grade optimal consist numbers previously delineated?" Again, taking into account yearly averages for weight discounts, a value loss was calculated. This loss was \$6.57 for every steer and heifer harvested in 2011.

**Hide/Branding:** Based on frequencies obtained during in-plant NBQA data collection, the percentages of steers and heifers slaughtered that had hides classified as native, side branded, butt branded or shoulder branded were determined. Cattle were not double counted in the case of multiple brands, but rather were placed in the category with the largest discount. To determine value losses, hide experts were consulted to determine the average yearly price for native hides and hides with side, butt or shoulder brands. These prices were then applied to the frequencies of hides classified into each grade, a weighted average was computed, and then the difference between this value and "optimal" hide value was computed to determine value losses. Value lost for hide/branding was \$0.87 for every steer and heifer harvested in 2011.

**Offal/Carcass Condemnations:** During in-plant data collection in each NBQA, the frequency of liver, tongue, head, tripe, lung and carcass condemnations were captured. These frequencies were then multiplied by the value of each product to determine the value lost due to offal and carcass condemnations. Value lost for condemnations was \$5.03 for every steer and heifer harvested in 2011.

**Total Lost Opportunities:** The total value loss associated with each NBQA was calculated by summing losses from all quality categories. The value loss in 2011 was reported to be \$47.11 for every steer and heifer harvested. This value was based on the new categories defined by packers and end-users of beef products and also incorporated the average values for 2012 market conditions (because the NBQA-2011 was completed in 2012). Direct comparisons of values for each of the NBQA audits should be made with caution. Many factors impact the cattle market – exports, weather, cattle numbers, etc. As such, market conditions, along with the preferred consist for USDA quality and yield grade by end users, change from year to year, having a significant impact on the lost opportunities. Nonetheless, estimated values lost due to quality defects during each NBQA, as well as major industry changes that occurred between each of the audit years, are outlined in Table 1.

**Table 1. Lost opportunities<sup>1</sup>, reported in 2012 \$/head for every steer and heifer slaughtered in the U.S., associated with quality defects identified during completion of the National Beef Quality Audits in 1991, 1995, 2000, 2005 and 2011.**

Defects Associated with:	1991	1995	2000	2005	2011
Quality Grade	\$30.69	\$31.47	\$27.39	\$25.02	\$27.83
Yield Grade	\$22.59	\$9.84	\$14.97	\$16.20	\$6.81
Carcass Weight	\$4.35	\$5.46	\$3.30	\$5.67	\$6.57
Hide/Branding	\$1.01	\$1.12	\$1.03	\$0.82	\$0.87
Offal/Carcass Condemnations	\$2.19	\$2.91	\$5.36	\$5.08	\$5.03
<b>Total</b>	<b>\$60.83</b>	<b>\$50.80</b>	<b>\$52.05</b>	<b>\$52.79</b>	<b>\$47.11</b>

<sup>1</sup> Market change editorials outline changes in market conditions between the years identified. Changes do not include changes in frequencies of defects, quality grade, yield grade or weight distribution of the audits. As such, market change editorials will not directly outline changes in lost opportunities seen in the table:

1991-1995; overall beef demand was in a decline and numbers were growing.

1995-2000; big gain event with high corn prices in 1996, inverted market feeder cattle and calves worth less than fed cattle. Big liquidation occurred in this time frame. The USDA mandated implementation of HACCP.

2000-2005; discovery of BSE in 2003. This had a major impact on offal prices and the value of several items was nearly zero. The December 2003 event also caused additional discounts to carcasses that were deemed "over 3- months of age" and those discounts were added to the quality grade calculation. Carcass weight continued to increase and packers tended to move carcass discounts from 950 to 1000 lb.

2005-2011; re-establish access to several export markets, thereby increasing the value of offal. Carcass prices also increased from \$130 for a Choice/YG3 carcass to over \$180/cwt for a Choice/YG3 in 2011. These changes accounted for the dramatic economic impact on the industry. However, using 2012 prices, allowing for heavier carcass weights and adjusting the preferred QG and YG distribution as requested in the Strategic Workshop, the industry gained ground in meeting the preferred consist.

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