Objectives

The National Beef Quality Audit (NBQA)– 2016 instrument-grading assessment evaluated beef carcass traits over the course of a year from selected beef processors. The objective of this study was to determine frequency distributions of ribeye areas within USDA quality grades.

Materials and Methods

There were 4,544,635 beef carcasses represented in the NBQA–2016 instrument-grading assessment. These data were collected from 18 federally-inspected processing facilities owned by 5 major beef processors over a 12-mo period (January 2016 through December 2016). Information was recorded during 1 wk of production each month at each facility. A variety of carcass trait information was collected at each facility including hot carcass weight, ribeye area, and marbling score, from which quality grades were determined. In an effort to create uniform ribeye area categories, ribeye area measurements were rounded down to a whole figure (i.e., 13.0 to 13.9 in² rounded down to 13.0 in²) and then were converted to metric units after data analysis.

Results

Analysis of the NBQA–2016 data revealed ribeye area frequency within USDA Prime, Choice, and Select quality grades reached its highest rate in the 83.9 cm² category, at 23.2, 22.4, and 20.1%, respectively. Of the 183,856 Prime carcasses evaluated, over two-thirds (67.7%) were recorded in the 4 smallest ribeye area categories, ranging from 64.5 cm² to 83.9 cm². For Select, 30.1% of the 960,157 carcasses possessed a ribeye area falling into 1 of the 4 largest categories between 96.8 cm² to 116.1 cm² compared to 24.1% Choice and 12.7% Prime. Additionally, evaluation of all 4484,420 carcasses from NBQA–2016 found that the majority of each quality grade, 62.4% Prime, 60.4% Choice, and 55.2% Select, yielded a ribeye area between 77.4 cm² and 90.3 cm². The mean ribeye area for all carcasses recorded was 88.9 cm², an increase in area from 88.45 cm² in the NBQA–2011.
When considering USDA Certified Programs, ribeye area mean was within qualification parameters with 86.2% of carcasses evaluated meeting the ribeye area specification for Certified Angus Beef (not considering additional specification requirements). Notably for Prime, 92.5% of the carcasses met the ribeye area specifications for Certified Angus Beef. Moreover, the NBQA–2016 demonstrated an increase in hot carcass weight when compared to the previous study, at 393.6 kg and 371.28 kg, for NBQA–2016 and NBQA–2011, respectively. The correlation between ribeye area and hot carcass weight \((r = 0.40)\) is indicative of a moderate, positive relationship, meaning a heavier carcass weight tends to result in a greater ribeye area.

**Conclusion**

These results show the relationship between ribeye area and USDA quality grade that can be considered in future industry specification and/or sorting programs.