Carcass 101: The Basics of Grading

by Linda Robbins

BOISE, IDAHO (Sept. 26, 2006) — Brad Morgan, an associate professor of animal science at Oklahoma State University, presented the basics of carcass grading during Tuesday morning's "Back to Basics" session at the 2006 National Angus Conference & Tour.

While inspection is mandatory and paid for by taxpayers, grading is a voluntary service that the packer pays for, Morgan explained during his Carcass 101 presentation. Grading is done to divide a commodity into groups that differ in the marketing process.

There were tentative standards for grading beef carcasses as early as 1923, Morgan said, but there were no official standards until the U.S. Department of Agriculture (USDA) announced formal laws for grading beef in 1926.

Morgan provided a detailed explanation of how USDA yield grade (YG) and quality grade (QG) are determined, presenting PowerPoint® slides to help the audience visualize each step of the process.

Yield grades predict cutability, or the percent of boneless, closely trimmed retail cuts that will be available from the round, loin, rib and chuck, Morgan explained. YG 1 represents the highest percent cutability, or more muscle vs. fat, while YG 5 represents the lowest cutability, with the least amount of muscle compared to fat.

Factors considered when establishing yield grade include backfat thickness and fat distribution; hot carcass weight; ribeye area; and percent kidney, pelvic and heart fat.

Instrument grading is available, and more packing plants are using the technology. For most carcasses, the computer will measure preliminary yield grade (PYG), hot carcass weight (HCW), and ribeye area (REA) in seven seconds, Morgan said. "That keeps up with line speed, but we still need someone to

Brad Morgan, Oklahoma State University, presented an overview of how USDA yield and quality grades are established.

use it, and we need someone who can see the whole carcass and total fat cover that the computer can't see."

Quality grade is the estimate of palatability, or tenderness, juiciness and flavor based on physiological maturity and marbling score. Maturity is based on color and texture of the meat, degree of skeletal hardening and shape and color of the ribs.

Marbling is the amount and distribution of intramuscular fat, or the flecks of fat in the ribeye. Marbling categories range from Devoid to Abundant.

Based on marbling score and age, carcasses are classified into one of seven USDA quality grades. Depending on the degree of marbling balanced with A or B maturity (under 42 months of age), the meat will be graded as Prime, Choice, Select or Standard. C, D or E maturity (more than 42 months of age) balanced with degree of marbling will be graded as Commercial, Utility or Canner.

You can listen to the audio of Morgan's presentation while viewing his PowerPoint by accessing the files in the newsroom at *www.nationalangusconference.com*.

Percent boneless, closely trimmed retail cuts, by USDA yield grade

Yield grade	% BCTRC
1	52.3% or more
2	50.0%–52.3%
3	47.7%–50.0%
4	45.4%–47.7%
5	45.4% or less

Marbling scores

Abundant
Moderately Abundant
Slightly Abundant
Moderate
Modest
Small
Slightly
Traces
Practically Devoid
Devoid