Instrument Grading

*by **Troy Smith***

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USDA's Martin O'Connor emphasized the potential to improve determination of carcass value based on more precise data.

DENVER, CO (Feb. 2, 2006) — The USDA grading system has long been criticized for its subjective measures of carcass merit where human fallibility may result in inconsistent application of carcass yield and quality grades.

Instrument grading, through color image analysis, is now touted as an answer to reducing and possibly eliminating grading inconsistency problems. During an Issues Forum session, Cattle Industry Convention attendees heard comments from a beef packer representative and a USDA grading system official, regarding application of instrument grading technology.

Packer perspective

Sharing a packer's perspective, Glen Dolezal, of Cargill Meat Solutions (Excel), said his company has been exploring instrument grading for 15 years. Currently the technology is applied in all six of Cargill's North American steer and heifer slaughter plants.

Vision cameras capture images of the ribeye at the same time each carcass is evaluated by USDA graders. More than 27,000 images per day are captured to analyze ribeye area, intramuscular fat deposition (marbling), backfat deposition (marbling), backfat thickness and lean muscle color.

"We're highly confident in the technology and expect to capture error-free images on a minimum of 97% of all carcasses," Dolezal reported. "The technology's shortcoming is its inability to determine skeletal maturity. We still need human intervention for that."

Dolezal said image analysis and determination of carcass grades can be achieved at the rate of one carcass every 8 seconds. Cargill uses the technology to track the consistency of USDA graders and cattle buyer performance. Data collected also helps measure fabrication floor performance within plants.

"We support implementation of instrument-based grading and carcass merit assessment to improve sameness in USDA grading," Dolezal stated.

Grader perspective

Grading system official Martin O'Connor said USDA agrees with the rationale for using instrument grading to reduce variation within and between packing plants. He emphasized the potential to improve determination of carcass value based on more precise yield

grades and marbling scores that influence quality grade.

"Packers have used it enough to see the value of instrument grading," O'Connor said. But USDA has to be deliberative and use scrutiny in embracing the technology, to ensure reliability when applied at plant chain speeds of up to 500 carcasses per hour."

O'Connor said USDA has approved image analysis for determination of yield grade and is in the process of validating performance standards for instrument-based evaluation of marbling.